

PUBLIC HEALTH REPORTS.

VOL. XXVI.

OCTOBER 27, 1911.

No. 43.

THE CHOLERA SITUATION.

There has been no material change in the cholera situation during the past week.

NEW YORK.

Vessels Arriving at Quarantine.

Passed Asst. Surg. von Ezdorf reports the arrival, October 13, of the steamship *Sant' Anna* from Marseille, Naples, and Palermo, with 710 steerage passengers and 149 members of crew. Bacteriological examination of all steerage passengers and two members of crew proved negative.

ORIGIN AND PREVALENCE OF TYPHOID FEVER IN FORT SMITH, ARK., AND MEASURES NECESSARY FOR ITS CONTROL.

By W. H. Frost, Passed Assistant Surgeon, Public Health and Marine-Hospital Service.

An investigation into the origin and prevalence of typhoid fever in Fort Smith, of which this is a report, was undertaken in compliance with the wishes of the local authorities by request of the governor of the State.

In this investigation an attempt has been made to collect such information as was available concerning the prevalence of typhoid fever in Fort Smith both during the present year and the last 10 years, and to study the causes of the prevalence of this disease with a view to making recommendations of measures for the removal or diminution of those causes.

In presenting this report I desire to express my very hearty thanks to the mayor and the members of the board of health, especially to Dr. A. E. Harden, the health officer; to Dr. Claxton, city bacteriologist; and to Mr. H. E. Kelly, of the board of improvement, for cooperation and assistance rendered. I desire also to express my appreciation of the courtesies extended by the physicians of the city and of assistance rendered in various ways by numerous citizens.

PREVALENCE.

In order to ascertain the prevalence of typhoid fever in the city during the present year Dr. A. E. Harden, the health officer, sent out to each physician shortly after my arrival a circular letter requesting

an immediate report of all cases of typhoid fever treated since June 1. In reply to this letter 46 cases of typhoid fever were promptly reported. This number does not, however, represent the total number of cases known to have occurred and to have been treated in the city during this period. Altogether 27 cases not reported by the attending physician have been reported from other sources and in most instances verified, making a total of 73 cases known to have occurred since June 1. Of these at least 2 are considered not to have been typhoid fever and may be deducted. Concerning the diagnosis of the remaining 71 cases, while it has been impossible to make a detailed investigation of each case, it is confidently believed that in the great majority the diagnosis of typhoid fever was correct. According to the city records there have occurred in the city since July 1, 5 deaths from this disease in residents of Fort Smith. It seems highly probable, therefore, that the estimate of 71 cases occurring since June 1 is approximately correct, since on this estimate the mortality would be about 7 per cent, which is about the usual mortality rate for typhoid fever.

By comparison with the death records of the city from 1901 to 1910, inclusive, it appears that the prevalence of typhoid fever in Fort Smith during the present year has not been unusual. During this year there have been recorded 12 deaths occurring in the city. Of these, 3 were of nonresidents brought into the city during their illness for treatment. The remaining 9 deaths were among residents of the city. This is equivalent to a rate of 12 deaths among the residents of the city for 12 months. The number of deaths each year since 1901 was as follows: 1901, 8; 1902, 9; 1903, 9; 1904, 9; 1905, 18; 1906, 6; 1907, 14; 1908, 12; 1909, 17; 1910, 14; making due allowance for increase in population during the last 10 years, it is evident that there has been, on the whole, no constant increase in the death rate from typhoid fever during this period.

In the following table are given the death rates in 1900 and in 1910 in several cities whose statistics are at present readily available:

Cities.	Deaths per 100,000 population in—	
	1900	1910
Boston, Mass.....	24.1	11.6
New York City.....	20.4	11.7
Philadelphia.....	37.2	18.0
Richmond, Va.....	103.0	21.9
Washington, D. C.....	79.7	24.4
Indianapolis.....	41.4	29.9
New Orleans.....	52.6	31.5
Baltimore.....	38.9	42.0
Atlanta.....		42.6
Nashville, Tenn.....		48.0
Charleston, S. C.....		56.1
Little Rock.....	47.0	34.8
Fort Smith.....	¹ 66.0	58.3

¹ For 1901; estimate.

The rate of 58.3 per 100,000 for Fort Smith in 1910 is higher than that of any of the cities named, which may be considered fairly representative of American cities in general. There are of course fairly

numerous other cities in which the rate is even higher, yet such a rate may very justly be considered quite excessive for a city of the size of Fort Smith at the present time. The average death rate in all the registration cities of the United States for 1908 was 25.8 per 100,000. In 40 cities of over 100,000 population, according to the census of 1900 whose statistics are given in the Vital Statistics Report of the Census Bureau for the years 1904-1908, only two had a typhoid death rate exceeding 50 per 100,000 in the year 1908.

Even after making due allowance for the increase in the apparent death rate, due to bringing in cases to local hospitals for treatment, it must still be admitted that Fort Smith has—and for the last 10 years has had—a typhoid death rate which is certainly excessive and is a matter worthy of the most careful consideration. It is probable that not less than 100 cases of typhoid fever occur annually in the city. A most conservative estimate would place the cost of those cases to the taxpayers of the city at not less than \$40,000. It is obviously impossible even to attempt an estimate of the distress and suffering entailed.

The necessity for giving careful and immediate attention to the problem of reducing typhoid fever depends, however, not only on the seriousness of the question, but equally on the practicability of effecting a very considerable reduction. From the figures above given it is seen that in practically all cities listed there has been, during the last 10 years, a substantial reduction in the typhoid fever death rate. This is especially notable in Richmond, Va., and in Washington, D. C., and is simply another illustration of what has been repeatedly proven, namely, that typhoid fever is practically, as well as theoretically, a preventable disease.

SOURCES AND MEANS OF TRANSMISSION OF TYPHOID FEVER.

Typhoid fever, whenever and wherever it may occur, is always due to one essential cause, namely, the typhoid bacillus or germ of typhoid fever. This germ is a living organism of extremely minute size, so small that it is invisible except when magnified many times with powerful lenses. It is, however, subject to the same laws which govern living organisms in general. Under favorable conditions it multiplies or breeds with amazing rapidity. Under unfavorable conditions it remains quiescent or, if the conditions are sufficiently unfavorable or prolonged, it dies.

When this germ is introduced into the human body through the mouth it may reach the intestines, multiply there, and give rise to the disease known as typhoid fever. *All the evidence available indicates that the human body is the only natural breeding place of the typhoid bacillus.* Wherever else it may be found in nature it may be safely considered to have come recently from the body of an infected person. Outside the human body the germs usually live but a comparatively short while. To this statement, however, there is one important exception: In milk the germs may find a favorable breeding place and multiply very rapidly.

Typhoid bacilli are discharged from the bodies of infected persons in the excretions of the bowels and often those of the bladder. These

discharges are the sole and only source of typhoid fever. Anything which may carry the bowel or bladder discharges of persons infected with typhoid fever to the mouths of other people may spread the disease. The prevalence of typhoid fever in any community is quite strictly proportionate to the chances offered in the community for the contamination of human food and drink with the discharges from the bowels and bladder.

Every person infected with typhoid bacilli is a possible source from which the disease may be carried to others. Infected persons may be classed into recognizable and unrecognizable sources. The most readily recognizable, and possibly the most important, source of typhoid bacilli is the person sick with the disease; the discharges of such persons always contain typhoid bacilli. Unfortunately, there are other important, but practically unrecognizable, sources from which typhoid bacilli may be spread. These are:

1. *Persons in the very early stage of the disease.*—A considerable time, usually from one week to three weeks, elapses between the entrance of the typhoid germs into the body and the development of definite symptoms of the disease. The germs may be discharged from the body for a considerable time before symptoms of the disease are recognized.

2. *Persons recently recovered from typhoid fever.*—A very considerable percentage of typhoid fever patients continue to discharge typhoid bacilli from the bowels and bladder for several weeks after the symptoms of the fever disappear.

3. *Persons long since recovered from typhoid fever.*—A small percentage (estimated at 2 per cent) of people who have previously had typhoid fever continue for years thereafter—often for the rest of their lives—to harbor and breed typhoid bacilli and to discharge them from their bowels or bladder. These people may themselves be in good health and can be recognized as typhoid bacillus carriers only by bacteriological examination of their discharges. It may be safely assumed and has often been demonstrated that any community where typhoid fever has been constantly present has in its midst a considerable number of such persons who mingle unrecognized with their neighbors. These unrecognized, unsuspected carriers are a continual source of infection.

4. *Persons who become temporarily infected with typhoid bacilli without developing the characteristic symptoms of the disease.*—In some cases typhoid bacilli multiply in the body, giving rise to only slight symptoms, the so-called walking typhoid. In still other cases it has been shown that the bacilli may multiply in the body for awhile and be discharged in the excretions without giving rise to any symptoms whatever.

In the prevention of typhoid fever attention must be paid to the unrecognized, as well as the recognized, sources. The bacilli from unrecognized sources, that is, from persons known to be sick with the disease, may be destroyed as they are discharged, namely, in the sick room. As it is impossible to destroy the germs as they are discharged from the *unrecognized* sources, the prevention of the spread of the disease from such sources consists in so disposing of all human discharges that there may be the least possible chance of their reaching the food or drink of the community.

The means by which human discharges containing typhoid bacilli are carried to other persons are fairly numerous:

1. These discharges may be carried on the hands of persons who handle typhoid-fever patients. Strict cleanliness diminishes the danger of carrying the discharges in this way; but even comparatively clean hands may still carry sufficient traces of infected discharges to cause the disease.

2. Where human discharges containing typhoid-fever germs are exposed, flies may become carriers of the infection and transfer the germs from the discharges to articles of food.

3. Human discharges emptied upon the ground may be washed into wells or streams. Water which may appear perfectly clean and palatable may readily contain a very considerable amount of human sewage, and it has often been known to cause severe epidemics of typhoid fever.

4. Milk may become infected with the discharges of typhoid-fever patients if handled by persons who are themselves suffering with the disease or who have handled typhoid-fever patients. It may also become infected by flies passing from an open privy to the milk pail. A milk bottle may become infected at the house of a typhoid-fever patient and unless properly sterilized before it is refilled its whole contents may become heavily infected. Infection of milk from any source is especially dangerous since, as above stated, the germs may multiply rapidly in milk at ordinary summer temperature.

5. Other, perhaps less important means of distributing typhoid germs, are fruits and vegetables, especially those which are eaten raw or those which after being cooked are handled by many persons or are exposed to flies. In fact, any article whatsoever that is used as human food or drink and is exposed in any way to contamination with human discharges may serve to carry germs of typhoid fever.

CAUSES OF TYPHOID FEVER IN FORT SMITH.

The ultimate sources of typhoid fever are the same in all communities, the carriers of infection varying in relative importance in different communities. In order to determine which carriers have been most important in the causation of typhoid fever in Fort Smith, a personal investigation was made of as many as possible reported cases, altogether 28. Of these 28 cases 4 were found to have originated outside the city, leaving 24 cases in which the disease was almost certainly contracted in or around Fort Smith. Of these 24 cases 5, equal to 20.8 per cent, were almost certainly due to direct contact with previously recognized cases; 7, equal to 29.2 per cent, are considered as in all probability due to infection from other nearby recognized cases either by personal contact or through the agency of flies. Altogether, 12 or 50 per cent of the investigated cases may be considered as due to contact, either direct or through flies, with previously recognized cases.

Concerning the other 50 per cent of cases, no definite cause could be ascribed to the individual cases. Certain facts, however, very strongly indicate that flies have probably played an important part in their causation since it was found that a disproportionate number of the cases were in neighborhoods supplied with open privies or defective water-closets.

Of the 24 cases investigated 15 or 62.5 per cent occurred on premises not connected with a sewer, using open privies for sewage disposal; 6, or 25 per cent, occurred on premises provided with only a yard water-closet. It may be mentioned here that the type of water-closet most generally found in outhouses is extremely objectionable. The closets usually have a narrow, cone-shaped bowl, imperfectly flushed, with the consequence that the sides are almost invariably found more or less contaminated with particles of fecal matter, especially where the enamel has been cracked or worn. Flies, which are usually most abundant when the closets are most filthy, may readily spread infection from such closets. Only 3 of the 24 cases investigated occurred in houses provided with good water closets located inside the house. It is obvious that there has been a very disproportionate prevalence of typhoid fever on premises and in vicinities where human discharges are emptied in privies or yard closets where flies may have ready access to them.

The sanitary conditions on the premises where the investigated cases of typhoid fever occurred were found to be bad in 18 or 75 per cent, fair in 6 or 25 per cent, and good in none. Comparing this with the sanitary conditions of the city generally, where it may be assumed that at least the majority of the premises are maintained in good sanitary condition, it is very evident that typhoid fever in Fort Smith has been closely associated with bad sanitary conditions; and again it may be emphasized that what constitutes a bad sanitary condition is more than anything else the presence of human filth.

In each case investigated inquiry was made as to the precautions exercised to prevent the spread of the disease to other members of the family and to neighbors. These precautions were: *Good*, in none except one imported case, *fair* in no case, *poor* in 10 families with an aggregate of 13 cases, *no precautions whatsoever* in 5 families with an aggregate of 10 cases.

Efficient precautions to prevent the spread of typhoid fever from a recognized case consist in the prompt disinfection or destruction of all discharges coming from the patient, and all articles whatsoever in any way soiled by those discharges. This may be accomplished by very inexpensive means so simple as to be readily carried out by any person of average intelligence when properly instructed. The general neglect of such precautions in the city is due evidently to a lack of proper instruction far more than to indifference in following instructions.

There is no evidence that infected milk has played any recognizable part in causing typhoid fever in Fort Smith during the present year.

The city water supply can hardly be considered as a probable source of infection for the cases investigated, since only 8, equal to 33½ per cent, of these cases had used the city water at all for drinking purposes within a month prior to their illness. The rest of the patients had used water obtained from wells usually located on their own or neighboring premises. These wells were, in some instances, deep driven wells; in other instances they were shallow wells subject to the danger of sewage pollution. Some of these cases may have been due to the use of infected wellwater. In the majority, however, it is believed that this was not the source of infection.

From a careful analysis of the cases of typhoid fever investigated and a survey of sanitary conditions generally I am of the opinion that the prevalence of typhoid fever during the current summer and fall has been due chiefly to the spread of infection through open privies and defective water-closets and to the lack of efficient precautions in the care of recognized cases of the disease.

WATER SUPPLY.

During the period of this investigation careful attention has been given to the city's water supply with special reference to the danger of its pollution with human sewage. The source of the city's water supply—the Poteau River—is subject, as are all streams flowing through populated areas, to constant pollution with discharges of persons living upon the watershed. The pollution of the watershed above Fort Smith, so far as may be inferred, is for the most part remote and, compared with other rivers, relatively slight. The river is, however, subject to occasional greater pollution from other sources, namely, from the more highly polluted Arkansas River when the latter at high stages causes a back flow in the Poteau. At such times a still more important source of pollution is the drainage from Mill Creek, which is carried by the back flow in the Poteau directly over the intake for the city's water supply.

In the bacteriologic examination of water it is possible to estimate with reasonable accuracy the total number of bacteria present, which, when carefully considered, gives a valuable index of the probable sanitary quality of the water. It is also possible, and usually of more importance, to estimate roughly the number and proportion of bacteria coming from the intestines of man or the lower animals. It is not practicable, by any bacteriologic methods as at present developed, to distinguish between the ordinary intestinal bacteria of man and those of other animals. It is always necessary, in interpreting the results of the bacteriologic examination of any water supply, to take into consideration the nature of the watershed. The presence of intestinal bacteria in the water of a river which drains a sparsely populated grazing country is less significant of dangerous pollution than the presence of an equal number of sewage bacteria in the water of a river draining a thickly populated area or directly receiving the sewage of a city.

Bacteriological examinations have been made of the following samples of water:

1. From the Poteau at the city's intake, 8 samples.
2. From the Poteau about 200 yards above the city's intake, 3 samples.
3. From the Arkansas River just above the mouth of the Poteau, 3 samples.
4. From Mill Creek just above the mouth of the Lower Branch, 8 samples.
5. From the Town Branch, which carries the drainage of the area for which it is proposed to construct a storm sewer, 6 samples.
6. From a city tap, 11 samples.

The results of these examinations are given in detail in the tables following.

Water from—	Date of collecting samples.	Total number bacteria per cubic centimeter.	Quantities in which the colon bacillus was demonstrated. ¹				Estimated number of colon bacilli in 10 c. c. of the sample.
			5 c. c.	1 c. c.	0.1 c. c.	0.01 c. c.	
Poteau River at city intake.....	Sept. 9	1,450	+	+	+	.....	100
	Sept. 11	1,675	.....	+	+	.....	100
	Sept. 12	500	.....	+	+	.....	100
	Sept. 13	900	.....	+	—	.....	10
	Sept. 14	(²)	.....	+	—	.....	10
	Sept. 15	350	.....	+	—	.....	10
	Sept. 18	440	.....	+	(?)	.....	10
	Sept. 20	2,325	.....	+	+	.....	100
Average.....		1,087	.....	.....	.....	.....	55
Poteau River above intake.....	Sept. 13	800	+	—	—	.....	2
	Sept. 14	(²)	.....	—	+	.....	10
	Sept. 15	300	.....	+	—	.....	10
Average.....		550	.....	.....	.....	.....	7.3
Mill Creek.....	Sept. 9	5,000	+	+	.....	.....	100
	Sept. 11	4,250	.....	+	—	.....	100
	Sept. 13	2,500	.....	+	+	.....	1,000
	Sept. 14	(²)	.....	—	—	.....	(?)
	Sept. 15	375	.....	—	—	.....	0
	Sept. 18	265	.....	.....	.....	.....	10
	Sept. 19	100,000	.....	+	+	.....	1,000
	Sept. 20	6,300	.....	+	+	.....	1,000
Average.....		16,950	.....	.....	.....	.....	458
Town Branch.....	Sept. 9	10,000	+	+	.....	.....	100
	Sept. 11	4,500	.....	+	+	.....	1,000
	Sept. 13	14,250	.....	+	—	.....	100
	Sept. 14	(²)	.....	+	—	.....	100
	Sept. 19	100,000	.....	+	+	.....	1,000
	Sept. 20	26,000	.....	+	+	.....	1,000
Average.....		31,000	.....	.....	.....	.....	550
Arkansas River, above mouth of the Poteau.	Sept. 11	2,525	.....	+	+	.....	100
	Sept. 12	14,500	.....	+	+	.....	100
	Sept. 20	6,000	.....	+	+	.....	100
Average.....		7,675	.....	.....	.....	.....	100
City tap, at laboratory.....	Sept. 9	475	+	—	—	.....	2
	Sept. 10	610	+	+	.....	.....	10
	Sept. 11	200	+	+	.....	.....	10
	Sept. 12	310	—	.....	.....	.....	0
	Sept. 13	535	+	—	.....	.....	2
	Sept. 14	(²)	+	+	.....	.....	10
	Sept. 15	275	+	—	.....	.....	2
	Sept. 17	510	+	—	—	.....	2
	Sept. 18	320	+	—	.....	.....	2
	Sept. 19	260	+	—	—	.....	2
	Sept. 20	630	+	+	.....	.....	10
Average.....		412	.....	.....	.....	.....	4.7

¹ Demonstration of *B. coli* consisted, in application of "presumptive" test, namely, gas formation in lactose-bile.

² Not estimated.

These examinations may be summarized as follows, giving an approximate idea of the relative bacteriologic quality of the samples from the various sources:

Source of samples.	Number of samples examined.	Average number of bacteria per cubic centimeter.	Average number colon bacilli (sewage bacteria) per 10 c. c. (very rough estimate).
Arkansas River.....	3	7,675	100.0
Mill Creek.....	8	16,950	450.0
Town Branch.....	6	31,000	550.0
Poteau at intake.....	8	1,090	55.0
City tap.....	11	412	4.7

The bacteriologic examinations, so far as they go, confirm the inferences which would necessarily be drawn from a sanitary survey of the watersheds of the several streams, viz:

The Poteau is a moderately polluted stream. The Arkansas is more highly, but not extremely, polluted.

Mill Creek and the Town Branch are both extremely polluted with intestinal discharges, especially after heavy rainfall. This is to be expected, as the pollution of these streams comes largely from surface washings. The recorded examinations of the samples from Mill Creek show a progressive decrease in the numbers of bacteria and sewage bacteria from September 9 to 18, a dry period, with a sudden great increase on September 19, following a considerable rainfall. Immediately after a heavy rainfall both Mill Creek and the Town Branch undoubtedly carry even larger numbers of sewage bacteria than indicated by these examinations, since the methods used were not adapted to estimating numbers exceeding 1,000 colon bacilli per 10 c. c.

The three days' sedimentation which the river water undergoes in the settling basins before being distributed to the city has effected an average removal of something more than 50 per cent of bacteria and a little over 90 per cent of the sewage bacteria, as well as may be estimated from so few examinations. Even this altogether inadequate purification can not be relied upon as constant, especially so long as the present practice is continued of pumping unsettled river water into the mains in case of fire.

The turbidity of the samples taken directly from the Poteau has varied during the period of observation from 150 to 300 (standard silica scale); water from a city tap from 120 to 280. Very little clarification takes place in the settling basins, owing to the fact that the particles of mud are so very minute as to remain almost indefinitely in suspension. The turbidity of two samples from the Arkansas was approximately 5,000 on the same scale, but the particles were coarser and settled out much more rapidly.

The present water supply of Fort Smith must be considered objectionable both for esthetic and sanitary reasons. The excessive turbidity of the water, rendering it repulsive in appearance, is of itself a serious objection. Quite aside from any consideration of safety, few people who can afford to do otherwise will drink the water of the Poteau River as at present supplied to the city. Very many use household filters, which, in addition to being highly inconvenient, can hardly be considered safe. Still others prefer to use well water, of more pleasing appearance but often far more dangerous than the city water.

The usual and unavoidable sewage pollution of the Poteau from the watershed above Fort Smith is not excessive as compared with the pollution of many other rivers utilized as sources of city water supplies. Since the greater part of this pollution enters the river many miles above Fort Smith, the natural purification processes reduce it very greatly before the water reaches the city. Undoubtedly, however, the degree both of pollution and of natural purification varies widely, so that while the water at Fort Smith may be for long periods comparatively safe, it is undoubtedly at other times fairly highly polluted from sources above Fort Smith. Seldom, if ever, even under the most favorable conditions, will the natural

water of the Poteau be of the quality commonly accepted as "safe" for drinking purposes.

More dangerous even than the constant pollution from sources above Fort Smith is the occasional much greater pollution with sewage from a part of Fort Smith and its vicinity draining into Mill Creek. The water of Mill Creek, carrying a very considerable amount of sewage, may readily find its way into the city intake at times when the Poteau is stagnant or when there is a back-flow from the Arkansas. Under unusual conditions, such as low water in the Poteau, stagnant or with a slight back-flow, and high water in Mill Creek as the result of local rains, the pollution of the city water supply might readily become very great and extremely dangerous to health. A severe epidemic of typhoid fever might result. In fact, sooner or later, if the present water supply of Fort Smith is maintained unprotected, there will almost certainly come a combination of conditions resulting in a water-borne epidemic of typhoid fever.

To render the water supply of Fort Smith safe and satisfactory it will be necessary to protect the intake so far as possible from pollution and to provide purification processes sufficient to remove the unavoidable pollution. Although the modern methods of water purification have reached a high degree of efficiency they are not perfect; and it must be emphasized that, so far as possible, the source of water supply must be protected from sewage pollution. The purification processes should be relied upon only to remove such pollution as unavoidably enters the source. The pollution which can be avoided is pollution with the sewage carried by Mill Creek.

Removal of the intake farther up the river would not satisfactorily protect it, since the back-flow of the Arkansas at times extends many miles up the Poteau, farther than it would be practicable to carry the intake.

To adequately protect the intake it would be necessary to divert Mill Creek to the Arkansas below the mouth of the Poteau or to build a dam above Mill Creek and below the intake. The choice between these two methods is an engineering problem. As to their relative cost or practicability I need express no opinion. The dam, if practicable, offers certain other advantages in addition to protecting the intake from Mill Creek drainage. It would form a settling basin in which the natural processes of purification would diminish the pollution received from sources higher up; it would be a safeguard against deficiency of water in excessively dry seasons. Finally it would exclude the water of the Arkansas River and to that extent simplify the processes of purification. The Arkansas River is much more muddy than the Poteau and its water is, moreover, very different chemically, so that purification processes adapted to the treatment of Poteau water would have to be considerably modified to satisfactorily purify water from the Arkansas.

A dam above Mill Creek, if found practicable by competent engineers, is recommended as the best means of protecting the intake from sewage pollution. When so protected the water of the Poteau can be readily clarified and rendered safe for drinking purposes.

On account of the very considerable amount of mud in the Poteau and the extreme fineness of the particles, the use of chemicals for "coagulation" will be a necessary part of any satisfactory purification process. If the application of the chemicals is under the proper

competent supervision there is no reasonable ground for objection to their use. The choice of chemicals and regulation of their amounts will have to be determined by experiment.

Filtration with the use of a coagulant is recommended as the safest and most satisfactory method of purifying the water. A properly constructed filtration plant operated under competent supervision may be confidently expected to give a safe and satisfactory effluent.

The construction of a filter plant is, however, a matter which would necessarily require a considerable period of time, hardly less than one or two years. It is indeed advisable that the planning and construction of such a plant, though started immediately, should not be undertaken hurriedly or unadvisedly. To protect the water supply in the meantime the following measures are recommended:

That a coagulant be used in the present sedimentation basins to clarify the water. The apparatus necessary for this process has already been installed at a very slight expense. It is believed that by the proper application of this process the water can be rendered clear and its bacterial content very greatly reduced. As an additional safeguard, a temporary substitute for filtration, it is recommended that hypochlorite of lime be applied to the water after sedimentation. It is suggested that this might be done most effectively at the weir between the second and third basins. The apparatus necessary for the application of hypochlorite of lime could be installed at almost negligible expense, and the cost of material thereafter would be very slight. The application of coagulant and hypochlorite of lime should, however, be undertaken only under the constant supervision of a competent chemist conversant with the methods of water purification. Such processes require constant adjustment to meet changing conditions and constant studies of the water before and after treatment to indicate the necessary changes and the efficiency of the processes. It is believed that a very great improvement in the city water supply, rendering it reasonably safe, can be made by these processes, which may, without considerable expense, be put into operation within a few weeks at most; and it is most urgently recommended that they be adopted.

It is hardly necessary to add that the present practice of pumping water directly from the river to a standpipe and turning the water from this standpipe into the city mains at every fire alarm is most unqualifiedly condemned and should by all means be discontinued. It would be worse than folly to continue this practice after the purification process above recommended has been put into operation. The standpipe should either be supplied with water from the third sedimentation basin—the same water supplied to the city—or else its use should be abandoned altogether. From such information as has been given me it would seem a comparatively simple and inexpensive matter to so connect the standpipe as to pump water to it from the sedimentation basin instead of from the river.

MILK SUPPLY.

No problem in the sanitation of a city offers greater difficulties or calls for more constant vigilance than such supervision over the milk supply as will render it free from the danger of introducing typhoid

fever and other infectious diseases. The efforts of the health authorities of Fort Smith to improve and to safeguard the milk supply are thoroughly appreciated and commended. There remains, however, much to be done in this direction before the milk supply of the city can be considered safe.

It is beyond the scope of this report to go into all the details of measures which should be enforced to insure safe milk. For the prevention of milk-borne typhoid fever it is necessary that inspection of the dairy farms should be rigid and performed at short intervals, so that any cases of suspicious illness may be at once reported and properly isolated. Attention should be paid to the sewage disposal on all these farms. Regulations prohibiting the disposal of human discharges on dairy farms in such manner as to offer any chance of contaminating the milk through any agency should be strictly enforced.

In order to insure cleanliness of the milk, bacteriological standards should be adopted and enforced in addition to the chemical standards of purity already enforced. These standards should be made so rigid as to require the utmost care on the part of dairymen to enable them to meet them, but should at the same time be reasonable.

In order that the dairyman may produce the best possible quality of milk a dairy inspector should be provided, whose duty it would be to pay frequent visits to all dairies; at first, to instruct the dairymen in the methods necessary to produce clean milk, and after instruction to see that these methods were rigidly followed. To perform these duties efficiently would require all the time of one man. The health officer, with his many duties, should not be required to make these inspections personally.

In spite of the utmost precautions there always remains some danger of a milk supply becoming infected with the germs of typhoid fever or other diseases. Efficient pasteurization destroys such germs without injuring the milk. It is recommended that pasteurization of milk supplied to the city be especially encouraged. Pasteurization, however, may be relied upon only when it is under strict supervision, when constant bacteriological examinations indicate that it is efficiently done, and when the subsequent handling and bottling is done under the strictest sanitary precautions. Milk after pasteurization is quite as susceptible to contamination with disease germs as is raw milk. Its handling and distribution, therefore, should be under supervision equally as rigid in all respects.

SEWAGE DISPOSAL.

When a city has been supplied with safe water and every possible safeguard thrown around the milk supply, there will still remain much to be done toward the prevention of typhoid fever. Protection of the water and milk supply will do much to prevent the introduction of typhoid fever into the city from outside sources. There will remain, in spite of this, numerous sources of infection within the city, requiring constant and vigilant supervision.

It is of the greatest importance for the prevention of typhoid fever to make provision for the disposal of all human discharges in such a way that they can not reach the food or drink of persons. To this end the discharges must be kept off the ground; otherwise they will pol-

lute the wells and may become scattered in other ways so as to spread the disease. They must, further, be absolutely protected from flies, chickens, and any other carriers.

These objects can be accomplished by providing a sewerage system serving every house in the city and a sanitary inspection force sufficient to see that proper connection with the city sewer is made and maintained at every house. As a temporary substitute where sewer connection is for the present impossible the use of a sanitary privy should be enforced. At a very small expense the insanitary open privy in almost universal use can be made water-tight, fly-proof, and reasonably safe.

It is considered that no measure for the prevention of typhoid fever is of greater importance than immediate attention to proper sewage disposal in every part of the city. A very cursory survey of the city has shown a great number of residences in districts long supplied with sewers still unconnected with the sewerage system and using open privies. In some instances this is said to be due to the fact that the city water has not been supplied to these districts. Wherever this is so it should be remedied, and wherever sewer connection is possible it should by all means be rigidly enforced.

As a preliminary to enforcing sewer connections and the construction of sanitary privies it is recommended that a systematic sanitary survey be made as early as possible and that such inspection be constantly maintained as will serve to keep the health authorities informed of the sanitary conditions of every block in the city. A sanitary survey of the whole city and the enforcement of proper sewage disposal is of especially vital importance for that part of the city whose surface drainage goes into the Poteau River through Mill Creek. It is to this section of the city that attention should first be directed in following out the above recommendations.

With regard to the construction of a storm sewer to drain that section of the city between Little Rock Avenue, Dodson Avenue, South Nineteenth Street, and the Poteau River, the importance of this sewer from a sanitary standpoint would appear to have been considerably magnified. The sewer as contemplated would empty into a small stream which in turn empties into Mill Creek. The effect of this sewer should be undoubtedly to improve the area through which it passes; to carry from this area more water and to carry it more rapidly. In proportion as it does this it will increase the volume of water entering Mill Creek.

While the area through which it is proposed to build this sewer is already provided with a sanitary sewerage system, a storm sewer would under existing conditions carry a considerable amount of human sewage, since there are many residences in this area not connected with a sewer, but using privies, allowing the discharges to be emptied on the ground. The surface drainage of this area is therefore polluted not only with the washings from stables and dirty streets, but also at present with human discharges from many privies. This drainage now finds its way through an open branch into Mill Creek and may consequently, under suitable conditions, find its way into the city water supply, constituting a grave danger to the public health. The increase of this danger through building a storm sewer in this section would not perhaps be very great and yet would not be negligible.

It is believed that the health of the city may best be protected by deferring the construction of this sewer, certainly until universal sewer connection has been rigidly enforced throughout the whole district which would be drained. It should preferably be deferred until the measures recommended for the protection of the water supply have been put into operation. It is believed that the use of this coagulant and hypochlorite of lime for the purification of the water supply would more than counterbalance the additional pollution carried to the intake in consequence of the construction of this sewer.

To summarize the recommendations in regard to the disposal of sewage, they are:

1. To make a complete sanitary survey of the city, reporting to the health authorities all premises not properly connected with a sewer.
2. To enforce sewer connections wherever they are at present possible.
3. Where sewer connections are not at present possible because of a lack of water supply, to extend the water system immediately to those districts.
4. In unsewered districts to enforce the abolishment of all open privies, to be replaced by water-tight, fly-proof privies of construction approved by the board of health, the can of these privies and disposal of their contents to be under the constant supervision of the health authorities.
5. To defer the construction of a storm sewer on the south side until universal connection with a sanitary sewer has been enforced in the entire area drained and until measures have been taken for the protection of the water supply from pollution by the drainage of Mill Creek.

Attention is called to the fact that these recommendations in regard to sewage disposal call for no large expenditure; that they may very easily be put into immediate operation with insignificant expense; and it is confidently believed that they will result in a most substantial reduction of the prevalence of typhoid fever.

OTHER IMPORTANT FACTORS.

Another matter to which attention should be constantly directed is a campaign for the extermination of flies. The most effective means for reducing the number of flies in a community is by excluding them from their breeding places. Their chief breeding places in the city are stable manure and garbage. Regulations requiring all stables to be kept clean and the manure kept in tightly covered fly-proof bins, and requiring all garbage to be kept in suitable tightly closed receptacles, would effect a wonderful reduction in the number of flies in a single season. To reduce the number of flies is not only to remove a serious nuisance, but to reduce the chances for the spread of typhoid fever and other diseases. The enforcement of these regulations and of such others concerning the cleanliness around premises as to effectively prevent the breeding of flies could only be accomplished by constant inspections and rigid supervision.

It was frequently noted in the city that foods exposed for sale, such as fruits and vegetables which are eaten raw, were inadequately

protected against flies. This is also a matter which should receive careful attention. I am informed that there is at present on the statute books a regulation requiring the screening of such foods. If so, it needs only to be enforced.

All restaurants and other places serving food to the public should be required to conform strictly to regulations drawn up by the board of health and should by rigid inspection be kept up to a high sanitary standard.

Finally, but perhaps most important of all for an immediate reduction in the prevalence of typhoid fever, the most rigid precautions should be exercised in the disinfection of all discharges from every known case of the disease. Heretofore this matter has been left altogether to the attending physicians. Some of these are doubtless as careful as possible; others, unfortunately, neglect to inform the attendants fully as to the necessary precautions and to insist upon their being carried out. Supervision over the preventive measures used in the treatment of a case of typhoid fever is just as truly a duty of the health department as similar supervision in the treatment of smallpox and is, in Fort Smith to-day, much more vital to the conservation of the public health.

Effective preventive measures will be universally carried out only when the health department receives prompt notice of every case occurring in the city and sends its representatives to give instructions in the necessary precautions and to see that they are carried out. The fact that 50 per cent of the few cases investigated in the city this summer were traceable with reasonable certainty to infection with previous cases is quite sufficient to demonstrate the importance of these preventive measures.

The further fact that in only one case investigated in the city outside the hospitals were efficient preventive measures being carried out is sufficient to indicate the urgent need of some supervision by the health department.

In order to carry out the measures as recommended in regard to the safeguarding of the milk supply, the sewerage system, the disposal of garbage and manure, and the prevention of typhoid fever from known cases, it is obviously necessary that the health department of the city should be greatly enlarged and strengthened.

The functions of the health department in a city are threefold:

1. Such a department needs to carefully and constantly study the causes of disease. For this purpose it should have accurate and readily available records of the general sanitary conditions of every section of the city, and should have a sufficient force of inspectors to keep this information up to date. It should receive from every practicing physician an immediate report of every case of infectious disease in his practice. The collecting of reports of infectious diseases by the health officer is of itself a task requiring much tact and constant vigilance.

In order to encourage such reports, every aid should be offered by the health department to the physician of the city in the diagnosis of infectious diseases. This is especially true as regards typhoid fever in a community where malaria commonly prevails. The distinction between typhoid fever and malaria in the early stages of illness is often very difficult. The diagnosis can be greatly facilitated by laboratory examinations such as it is not practicable for the average

practicing physician to make. The expense of having such examinations made by a bacteriologist not in the public service is a serious item to people of restricted means. It is now generally recognized as one of the functions of a municipal health department to render aid to the physicians in the early diagnosis of infectious diseases. The laboratory already maintained for such purposes has made a good start in this direction, and deserves such cooperation from the physicians and such liberal support from the city as will enable it to enlarge its scope and usefulness.

The conditions in each case of typhoid fever should be studied very carefully by the health department in order that preventive measures may be employed in the most effective manner and that any unusual condition, producing or threatening an epidemic of typhoid fever, may be discovered at the earliest possible moment. For this purpose every case should be visited, as soon as reported, by a representative of the health department, who should collect all information bearing on the possible source of infection. Constant and careful study of such data is essential to the conduct of a successful and economical campaign of prevention.

The death records of the city require a careful study not only in regard to typhoid fever but in regard to all other causes of death. These should be kept complete in such manner as to give the greatest possible information as to the health of the city and to be most readily available to all persons interested.

2. As a result of such a study of the sanitary conditions and causes of disease in the city, it should be the function of the board of health to recommend measures for the prevention of disease and to enforce obedience to such regulations. At present the health department is crippled, not so much for lack of authority or of proper statutes as for the lack of machinery to observe whether their ordinances are obeyed and to enforce obedience where it has been neglected.

In this connection attention has already been called to the necessity of having sanitary inspectors to observe conditions as regards sewage and garbage disposal and the sale of food supplies, and to enforce the ordinances relating thereto; also, to the necessity of having a dairy inspector to devote his whole time to this work.

3. Finally, a very important duty of the health department is to keep the public informed as to the prevalence of diseases and to educate them in measures necessary for their protection. Ignorance regarding the simplest principles of public health is responsible for as much if not more disease than is indifference. It is rare to find even well-educated people versed in the most elementary principles of the prevention of typhoid fever, for example. The distribution of literature by the city health department, sanitary instruction in the schools, and the use of newspapers for educational purposes would entail very little expense and would undoubtedly promote the efficiency of preventive measures, especially in the reduction of typhoid fever.

The results which may be attained in the prevention of disease by a fully equipped department of health are by no means purely speculative. To cite a single example: An admirable, energetic department of health was organized in Richmond, Va., in the year 1906. For 25 years prior to the organization of this department the city had had an average annual death rate of 77.4 per 100,000 from typhoid

fever. For the 4 full years 1907 to 1910, inclusive, in which this department has been in operation the average annual typhoid death rate has been 34.4 per 100,000—approximately one-half of what it had previously been. The effected reduction in the prevalence of this disease has been progressive, each year showing a death rate lower than that of the year preceding; and for the last year of this period (1910) the rate was 21.9 per 100,000—less than one-third of the rate which had for so many years been accepted as "usual" for that community. In this instance the reduction has been accomplished almost wholly by efforts directed toward preventing the spread of infection from sources within the city, by methods generally similar to those outlined above. The milk supply has been safeguarded by a careful inspection system. The water supply, however, remained, until the latter part of 1909, the same as for many years previously.

Many other examples could be cited as to the results accomplished by an effective health organization. Unfortunately, even more examples can be cited of disaster due to the lack of such organizations. It may be safely asserted that the most economical investment which any city can make is a liberal appropriation for the employment of the most efficient persons as guardians of the public health and for furnishing to them every facility to carry on their policies.

Even with the most perfect organization, however, the reduction of the prevalence of typhoid fever, in any community where it has long been prevalent, is a matter not of one but of many years' work. Efforts to this end should not be relaxed on the showing of a substantial reduction; on the contrary, they should be redoubled. When the number of cases has been reduced one-half, it is then possible with the same expenditure of money and time to pay twice as much attention to the prevention of further spread from these sources. It is only by such progressive increase of vigilance that the disease can finally be eradicated.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since Jan. 1, 1910.]

EVERETT, MASS.

FOODSTUFFS—PROTECTION OF.

Whereas the exposure of foodstuffs to street dust, insects, and animals is liable to infect and corrupt such foodstuffs, it is hereby ordered that meat, poultry, game, fish, sea food, dried or preserved fruits, dates, figs, cherries, grapes, berries, cut fruits, cut melons, cracked nuts or nut meats, candies, maple sugar, confectionery, or bakers' products shall not be kept, sold, or offered for sale in or near an open window or doorway, outside of a building or in any street, private way, or public place of the city of Everett, unless so covered or screened as to be protected from dust and flies or from contact with animals.

No article intended to be used as food shall be exposed or displayed in any street or way, or in front of any place of business, unless the bottom of the box or other receptacle containing such articles is raised at least 24 inches above the sidewalk, platform, or landing upon which such receptacle rests.

Meats or other products as named above shall not be carried through any street, private way, or public place unless properly protected or screened from dust and flies. Every person being the occupant or lessee of any room, stall, building, or place where any meat, poultry, game, fish, sea food, milk, vegetables, butter, fruit, confectionery, bakers' products, or other articles intended for human food shall be kept, stored, sold, or offered for sale shall maintain such room, stall, building, or place, and its appurtenances, in a clean and wholesome condition. Every peddler of foodstuffs from wagons or carts, in addition to the covering or screen provided for in this regulation, shall keep in his wagon or cart a suitable receptacle for the wastes of his business, such wastes to be disposed of in a manner that shall not create a nuisance.

No person or corporation, individually or by his agents, servants, or employees, shall transport meat or poultry of any description through the public streets or ways of the city of Everett, except in wagons or vehicles which have been thoroughly washed at least once in every 24 hours. (Regulations board of health, adopted May 15, 1911.)

BUTTE, MONT.

MILK—REGULATION OF THE PRODUCTION, CARE, AND SALE.

SEC. 135. No person, corporation, or driver of any milk wagon, or any servant or agent of any vendor of milk, shall sell, or offer for sale, expose for sale, dispose of, exchange, or deliver, or with the intent so to do, as aforesaid, have in his or their possession, care or custody or control, milk or cream for human food without having first been licensed so to do.

Every person or corporation selling or disposing of milk or cream shall pay license fees as follows: For each wagon used in the delivery of milk, \$1 per month; for each place of business selling milk, \$1 per month. Every person or corporation violating this section or any of its provisions, shall be fined not less than \$1 nor more than \$100 for each offense.

SEC. 136. All licenses granted pursuant to this article may, at any time, be revoked by the department of health for violation of the provisions hereof, or for any other good and sufficient cause.

SEC. 137. Any person or corporation desiring to be licensed as a milk vendor in accordance with the provisions of this article, shall make application in writing

therefor to the department of health; such application shall be made upon a printed form, to be supplied by the department of health. Such applicant, if an individual, shall state therein his full name and residence, and if a corporation, shall state the full name and residence of each of the officers; such applicant shall state the location of the place at which it is intended to carry on such business; shall contain the number of every wagon or vehicle to be used by the applicant in or about his business; also the number of cows, if any, owned or controlled by the applicant. The department of health upon the receipt of such application shall investigate or cause to be investigated the place of business designated in such application and the wagons or vehicles intended to be used by such applicant. If such place of business or such wagons or vehicles are found by the department of health to be in a sanitary condition and fit for the uses and purposes for which they are intended to be put, he should transmit such application to the city treasurer for his approval thereof, and the treasurer shall thereupon cause to be issued to such applicant, on the payment by him to the city treasurer of the license fee, as herein provided, a license to carry on, engage in, and conduct the business of vendor of milk in the city, at the place designated in such application, and to employ in and about such business the number of wagons or other vehicles designated and described in such application for and during the period for which such license is issued.

SEC. 138. If any person or corporation licensed under the provisions of this article shall change the location of his or its place of business, notice of such change shall be given therefor to the department of health, and no business shall be conducted or carried on upon any such license at such new location until such notice shall have been given as herein provided.

SEC. 139. Each vendor of milk or cream shall, before engaging in the sale of milk or cream, cause his name to be placed and to remain in letters not less than 6 inches in height on each outer side of all wagons or other vehicles used by such vendor and in the conveyance or sale of milk or cream. Each vendor of milk or cream shall, before engaging in the sale of milk or cream, cause to be placed on the outer side of each wagon or vehicle used by such vendor in the conveyance or sale of milk and cream, a metal plate, 8 inches long and 4 inches wide, which shall be stamped and numbered corresponding with the license number of the milk vendor by whom such vehicle is used.

SEC. 140. It shall be the duty of the meat and milk inspector to inspect each dairy supplying milk to the public not less than once in every month during the calendar year, and it shall be the duty of such inspector to issue to each person or corporation a certificate of health every 90 days, which certificate of health shall include a certificate of the sanitary condition of such dairy.

SEC. 141. Every person or corporation having a license to engage in or carry on the business of vendor of milk or cream, or either of them, shall keep all cans and other receptacles used in or about the handling of milk or cream, or either of them, and all refrigerators or compartments and stores or other places where milk or cream, or either of them, is kept, stored, or handled, in a clean and sanitary condition, free from the presence or vicinity of any article or thing likely to contaminate or injuriously affect the quality or sweetness of the milk or cream and shall also cause all cans and other receptacles in which milk or cream is kept to be sterilized with boiling water or live steam each time they are used, as soon as they are empty and before being used again, and shall cause all pouring cans, dippers, and other vessels used in or about the vending of milk or cream to be scalded and sterilized daily, and shall cause all bottles or jars in which milk or cream is sold or offered for sale or delivered to be washed clean and sterilized each time they are used, as soon as they are empty and before being used again.

SEC. 142. The city health officer or any inspector or police officer authorized by the department of health shall have the right and power to enter and have full access to any building, structure, or premises where any milk or cream, or either of them, is stored or kept for sale, and shall have the right of access to all wagons, railroad cars, or other vehicles of any kind used for the conveyance or delivery of milk or cream, or either of them, and to any building, structure, or premises where he believes, or has reason to believe, milk or cream, or either of them, is stored or kept for sale, and shall have the right to take samples of milk and cream therefrom for the purpose of inspecting, testing, or analyzing the same.

SEC. 143. Mixture of any two or more of the following articles of human food, whole milk, skimmed milk, and cream, or condensed milk, by any person or corporation licensed under this article is hereby prohibited.

SEC. 144. No person or corporation licensed under this article shall keep, sell, or offer for sale, convey, deliver, or have in his or its possession, charge or control, any milk in this city, if such milk contains more than 88 per cent of watery fluids or less than 12 per cent of total solids, or less than 3.3 per cent of butter fats. Any person or

corporation violating any of the provisions of this section shall be fined not less than \$10 nor more than \$200 for each offense.

SEC. 145. No person or corporation licensed under this article shall keep, sell, or offer for sale, convey, or deliver, or have in his or its possession, charge or control, any cream in the city if such cream contains less than 20 per cent of butter fat. Any person violating any of the provisions of this section shall be fined not less than \$10 nor more than \$200.

SEC. 146. No person or corporation licensed under the provisions of this article shall sell or offer for sale in the city, any milk from which the cream or any part thereof shall have been taken, unless such milk shall be offered for sale and sold by such person or corporation as skim milk; and no person or corporation shall have in his or its possession, charge, or control, with intent to sell or offer for sale or deliver any such milk from which the cream or any part thereof shall have been taken, unless the cans or other receptacles containing such milk shall have been painted on the outside thereof, not less than 6 inches from the top of such cans and other receptacles, the words "skim milk" in plain black letters not less than 3 inches in height and 1 inch in width on two sides thereof. No such person or corporation shall sell, offer for sale, or deliver any skim milk containing less than 9 per cent of total solids, other than butter fat, or containing more than 1 per cent of butter fat. Any person or corporation violating any of the provisions of this section shall be fined not less than \$10 nor more than \$200 for each offense.

SEC. 147. Whoever by himself, or by his agent or servant, or as a servant, agent, or employee of any other person or corporation, sells, offers for sale, exchange, delivers or transports, or has in his charge, possession, or control with intent to sell, offer for sale, exchange or deliver in the city any milk or cream, or skim milk or cream for human food which is unclean, diluted, impure, unwholesome, adulterated, or not of the standard provided for by this article, or milk or cream or skimmed milk to which water or any foreign substance has been added, or any skimmed milk in violation of this article, or cream or milk produced from sick or diseased cows or from cows kept in unclean, filthy, or unhealthy condition, or from cows fed upon manure or stable refuse, or from the refuse from breweries, slops, mash, refuse of food that has been subject to fermentation, or milk or cream that has been exposed or contaminated or affected by the discharges or exhalations from any human being, animal, sick with any contagious or infectious disease, shall for the first offense be fined not less than \$10 nor more than \$100, and for each subsequent offense be fined not less than \$20 nor more than \$300.

SEC. 148. Any person who shall adulterate milk or cream or reduce or change it in any respect by the addition of water or any foreign or other substance or by the removal of cream therefrom, with a view of selling or offering for sale or exchange in the city after such adulteration or change, shall be fined not less than \$10 nor more than \$200.

SEC. 149. Any person or corporation who shall, in the city, sell, offer for sale, deliver or transport with the intent to sell, or offer for sale, or have in its or his care, custody or possession, any milk or cream containing any coloring matter, or any adulterations or preservatives for the purpose of artificially increasing the quantity, or for preserving the sweetness thereof, or for any purpose whatsoever; or any person or corporation who shall in this city sell or offer for sale, for use in milk or cream, or have in his or its possession or control with the intent of so selling or offering for sale, any preservative, coloring matter or other adulteration, shall be fined not less than \$20 nor more than \$200 for each offense.

SEC. 150. No person or corporation shall manufacture, sell or offer for sale in the city, any condensed or evaporated milk for domestic use, unless the same shall be put up in packages or cans, upon which shall be distinctly labeled or stamped the name or brand by whom, or under which, the same was made. Nor shall any person or corporation manufacture, sell or offer for sale in the city any condensed or evaporated milk for domestic use, unless the same has been manufactured from pure, fresh, unadulterated milk from which the cream has not been removed, or unless the proportion of milk solids and butter fat contained in the condensed or evaporated milk shall in amount be equivalent of milk solids and butter fats as provided in this article. Nothing herein shall be construed to prevent the addition of cane sugar in the manufacture of condensed or evaporated milk. Any person or corporation violating any of the provisions of this article shall be fined not less than \$20 nor more than \$200.

SEC. 151. All milk or cream from sick or diseased cows, from cows fed upon manure or stable refuse or upon refuse from breweries, or any mash or refuse or food that has been subject to fermentation (or that may affect or be detrimental to life or health) or from cows that are permitted to drink contaminated or unwholesome water of any character whatever, shall, upon discovery thereof, be confiscated, forfeited, and destroyed by or under the direction of the compartment of health or officers detailed for that purpose.

SEC. 152. Nothing in this ordinance shall be so construed as to prohibit the use or sale of what is known as butter milk, provided the same is produced from pure and wholesome milk. Should any such butter milk be sold or offered for sale in the city or be in the custody or possession of any corporation in the city with the intent of selling and offering for sale the same, which is not the product of pure and wholesome milk, or which is impure or adulterated, such person or corporation shall be fined not less than \$10 nor more than \$100.

SEC. 153. Every person or corporation owning, keeping or in possession of, charge or control of any cow stables or places where milch cows are stabled or kept in the city, shall clean or cause to be cleaned such cow stables or places daily, in a thorough manner and by such methods as shall be satisfactory to the department of health. Any person or corporation violating any of the provisions of this article, shall be fined not less than \$10 nor more than \$100.

SEC. 154. If any cow be sick or diseased, the owner or person in charge thereof shall not sell, offer for sale, or expose for sale the milk or cream therefrom, but shall at once destroy such milk and cream. Any person or corporation violating any of the provisions of this section shall be fined not less than \$25 nor more than \$300.

SEC. 155. No person or corporation shall offer for sale or keep for sale any milk or cream drawn from any cow within 15 days before or one week after parturition of such cow, nor shall any person or corporation cause or permit any milk or cream drawn from any cow within either of the periods named to be mixed with any other milk or cream. Any person or corporation violating any of the provisions of this section shall be fined not less than \$10 nor more than \$100.

SEC. 156. Every person or corporation owning or keeping a dairy in the city shall maintain the premises thereof free from any accumulation of refuse matter or offal. Any person violating any of the provisions of this section shall be fined not less than \$10 nor more than \$200.

SEC. 157. No person or corporation shall have in his or its possession any manure or stable refuse, or any refuse of any brewery, or any mash or refuse or food that has been subject to fermentation, for the purpose of feeding the same to any milk cow or cows. Any person or corporation violating any of the provisions of this article shall be fined not less than \$10 nor more than \$100.

SEC. 158. All cows from which milk is sold shall be tuberculin tested at least twice each year, under the direction of the department of health, and in case any cow shall be found to be affected with tuberculosis, the department of health shall report same to the State live-stock sanitary board.

SEC. 159. It shall be unlawful for any person, company, or corporation to make or cause to be made, or use or have in his or its possession, any imitation or counterfeit of any seal used by the department of health in the inspection of milk and cream, and to change or to tamper with the samples taken or sealed by said department.

SEC. 160. Nothing in this article relative to the sale of milk shall be construed as to apply to any persons handling or using the milk from not more than two cows.

SEC. 161. It is hereby made the duty of all persons, corporations, or association of persons handling or using milk for sale, where cans, bottles, or other receptacles are used for the purpose of transporting milk or cream, to keep said bottles, cans, or other receptacles tightly covered at all times when containing milk or cream.

SEC. 162. All the provisions of this article shall apply to milk and cream sold or offered within the corporate limits of this city and within 5 miles thereof. Every hotel or restaurant or boarding-house keeper who furnishes milk or cream to his or their guests or boarders shall be in all respects subject and amenable to the provisions of this article, save and except the provision as to the adoption of the permit as contained in section 1. It shall be the duty of the milk, meat, and food inspector or any person knowing of any violation of any of the provisions of this article to immediately report the same to the department of health. It shall be the duty of the city attorney to prosecute the offender complained of.

SEC. 163. Any person or persons, company, corporation, or association of persons violating any of the provisions of this ordinance, and particularly Article XV, where no other penalty is provided, shall be subject to a fine for a violation thereof of not less than \$5 nor more than \$100 for each offense. (Ordinance adopted June 16, 1911.)

JACKSONVILLE, FLA.

PRIVIES—CONSTRUCTION OF.

SECTION 1. All privies shall be so constructed as to prevent the access of flies to the night soil container. In order that this may be accomplished, the compartment under the seat in which stands the night soil container shall be tightly constructed of sound lumber, without cracks or crevices. Any openings into this compartment

for ventilation shall be covered with wire fly screening. There shall be at the back or side of this compartment an opening for the removal of the night soil container, which opening shall be provided with a tightly fitting, let-down, board cover, hinged to the house and so constructed as to prevent the access of flies to the night soil. This cover shall be provided with a hook or button and shall always be kept closed. Where practicable, the opening shall abut on a public alley so as to be readily accessible to the city scavenger.

SEC. 2. The night soil container shall be a strongly constructed water-tight wooden box or tub. It shall not rest on the ground, but on cleats or a platform, in such a position that its top shall not be more than 1 inch below the undersurface of the closet seat. Whenever such a box shall cease to be water tight it shall be replaced by a sound one.

SEC. 3. The roof of each privy or earth closet shall be water tight, and if it slopes to the rear of the house it shall project not less than 6 inches beyond the rear wall of the house. The doors of all privies shall be tight fitting and self-closing, and any windows or openings for ventilation shall be covered by wire fly screens. All privies shall have at least one opening of not less than 2 square feet for ventilation.

SEC. 4. In case of existing privies which are not in accordance with the above rules, the owner of the property will not be required to reconstruct the privy unless, in the opinion of the board of health, said privy is a menace to health, but all privies shall comply with the following minimum requirements:

(a) The roof shall be water tight and shall not discharge rain water in the night soil container.

(b) The house shall be without openings and cracks, through which flies may enter. It shall be provided with a tight self-closing door, and shall have an opening or openings for light and ventilation, which shall be screened for the exclusion of flies.

(c) The seat shall have a self-closing hinge cover, of sufficient size to completely cover the opening or openings in the seat.

(d) There shall be a tightly fitting let-down hinged cover over the box opening for the exclusion of flies.

(e) The box or tub shall be water tight and shall not project beyond the house.

SEC. 5. All alterations or repairing which shall be hereafter made on any privy in the city of Jacksonville shall be made in accordance with the requirements under sections 1, 2, 3, and 4, and whenever it shall become necessary to entirely reconstruct or change the location of any existing privy the new privy shall be constructed throughout in conformity with said requirements. Whenever, in the opinion of the board of health the condition of any privy is such that it can not be put in a sanitary condition, the board of health shall order a new privy constructed in conformity with said sections.

SEC. 6. All privies shall be kept clean at all times. The door of the house shall not be allowed to remain open at any time unless there is a self-closing fly door in addition to that required under the above rules. No wash water, garbage, kitchen slops, or other liquid wastes shall be emptied into the privy. No night soil from any person suffering from typhoid fever or other serious bowel trouble shall be deposited in any privy without being previously disinfected in such manner as directed or approved by the city board of health.

SEC. 7. Any persons violating any of the provisions of this ordinance shall upon conviction be punished by a fine not exceeding \$5 for the first offense and not exceeding \$100 for each subsequent violation, or imprisonment not exceeding 30 days. (Ordinance adopted Aug. 2, 1910.)

DOGS—REGULATION OF THE KEEPING OF.

SECTION 1. Every person owning, possessing, keeping, or harboring any dog within the limits of the city shall report to the city recorder within 30 days after the 1st day of May in each year his name and address, and shall give the name, breed, color, and sex of each and every dog owned or kept by such person, and shall pay to the city treasurer the sum of \$1 for each and every dog so owned, possessed, kept, or harbored, and shall cause such dog or dogs to be registered for a license in the office of the city recorder. Upon the payment of such fee the city recorder shall furnish to the person paying the same a license tag and number of registry of each dog for which the fee as herein provided has been paid, and the license year shall extend from June 1 to May 31 of each year.

SEC. 2. Each dog kept within the city shall be provided by its owner or keeper with a collar made of leather, metal, or some other substantial material to which a license tag shall be securely fastened. No dog shall be permitted to be kept or to remain within the city unless the owner or keeper thereof shall have caused such dog to be registered, licensed, and provided with a collar and tag as herein required.

SEC. 3. The city recorder shall keep a complete registry, in a book to be kept for that purpose, of all licensed dogs, describing the same by name, breed, color, and sex, and shall also enter the name and address of the owner or keeper as given and the number of the city license tag. He shall provide each and every year such number of metal tags as may be necessary (the shape to be changed each year) and have stamped thereon the year for which the tag is paid, the letters "C. D. L.," and also the number of the tag, and it shall be the duty of the city recorder to deliver one of such metal tags, numbered to correspond with the number of the registry of the dog, to the person having paid the tax upon any such dog.

SEC. 4. No person shall cause or permit any dog owned or kept by him to run at large on any street, alley, or other public place within the city at any time unless such dog shall be securely muzzled so as to effectually prevent it from biting any person or animal. Any person being the owner or keeper of a dog who shall suffer such dog to run at large in violation of the provision of this section shall be punished by fine not exceeding \$25, or by imprisonment not exceeding thirty days. Every day on which said person shall suffer any dog owned or kept by him to run at large without a muzzle, after the first conviction under this ordinance, shall constitute a separate and distinct offense. Nothing herein contained shall be held to require the muzzling of any dog while on private premises or while on any street, alley, or other public place if such dog shall be lead by a chain or in leash in such manner as to prevent such dog from biting any person or animal.

SEC. 5. Any person owning or keeping a dog within the city who shall permit such dog to be kept or to remain within the city without being licensed in accordance with the provisions of this ordinance, or without being provided with a collar and tag as hereinbefore required, shall be punished by fine not exceeding \$25, or by imprisonment not exceeding thirty days for each dog owned or kept by him in violation of the provisions of this ordinance relating to license or to the providing of a collar and tag, and each and every day which shall elapse after the first conviction of a violation of any of the provisions of this ordinance relating to license or to the providing of a collar and tag on which such dog shall remain unprovided with a collar, license, tag, or either of them, shall constitute separate and distinct offenses.

SEC. 6. It shall be the duty of the sanitary patrolmen, under the direction of the city board of health, to ascertain from the occupants of all premises inspected by them the number of dogs owned or kept by the occupants of such premises; and they shall report weekly to the city recorder such dogs as shall be unprovided with collars and license tags, giving the names and addresses of the owners or keepers of such dogs.

SEC. 7. On request of the city marshal the mayor shall appoint as many persons as assistants to the city marshal and police as may be deemed expedient, to catch dogs, and they shall hold said positions at the pleasure of the mayor.

SEC. 8. It shall be the duty of the city marshal, his assistants, all policemen, and other persons authorized or appointed to catch dogs to catch, take up, and impound in such pound as the said city marshal may direct, any dog found running at large within said city not securely muzzled or not having a collar around its neck and one of said metal tags attached thereto, and should any such dog not be redeemed within five days after the same shall have been impounded it is hereby made the duty of the person in charge of the pound wherein such dog shall be impounded to forthwith kill or cause the same to be killed. The person or persons appointed to catch dogs, as aforesaid, shall receive a fee of 50 cents for every dog taken up and impounded by him or them, such fees to be paid from the general fund of said city, and no other compensation shall be paid for such services.

SEC. 9. The place wherein dogs are impounded shall be under the supervision and control of the city marshal, and in order to redeem any dog which may have been impounded under the provisions of this ordinance the owner or keeper of any dog shall pay to the city marshal the sum of \$1 and a further fee of 10 cents per day for each and every day it shall have been impounded, and upon which payment being made such dog shall be released; and it shall be the duty of the city marshal receiving any money for the redemption of any dog, as aforesaid, to keep a register of all animals so redeemed and the amount paid, and to account for and pay to the city treasurer, at the end of each week, all moneys received from such source by him.

SEC. 10. The city marshal or person in charge of the pound to which dogs shall be taken in accordance with the provisions of this ordinance shall immediately, upon receiving any dog at such pound, make a complete registry thereof, entering the breed, color, and sex of such dog, and whether licensed or not. He shall enter the name and address of the owner or keeper of such dog and the number of the license tag, if numbered, and he shall keep licensed dogs separate from unlicensed dogs.

When any licensed dog shall be impounded he shall forthwith give notice by mail to the owner or keeper of such licensed dog, informing such owner or keeper of the impounding of his dog.

SEC. 11. If any dog is impounded without having a proper collar and license tag, the owner or keeper of such dog shall secure a collar and license tag, as herein provided, before such dog shall be surrendered to him.

SEC. 12. No person shall own or keep in the city any dog which by barking, biting, howling, or in any other manner disturbs the quiet of any person.

SEC. 13. If any dog running at large is not securely muzzled or is not provided with a proper collar and license tag, and if such dog can not safely be taken up and impounded, such dog may be killed by the city marshal or by any policeman or dog catcher.

SEC. 14. It shall be unlawful for the owner or keeper of any female dog to allow such dog to run at large while in heat; and for every such offense the owner or keeper of such dog shall, upon conviction, be punished by fine not exceeding \$100, or by imprisonment not exceeding 30 days, either or both; and it shall be the duty of the city marshal or any policeman or dog catcher to kill such dog, when caught outside of her owner's or keeper's inclosed premises.

SEC. 15. If any dog shall bite any person or animal, it shall be the duty of any person owning, possessing, keeping, or harboring such dog, or the animal so bitten, to forthwith surrender said dog or such animal to the city marshal or to any policeman or dog catcher, upon the request of the city health officer, and such dog or other animal so bitten may be impounded under the care of the city health department for a period of time not exceeding three weeks.

Any person having the possession of such dog or other animal who shall refuse to surrender the same as aforesaid, or shall conceal or take away such dog or animal without the consent of the city health officer, shall, on conviction, be punished by fine not exceeding \$500, or by imprisonment not exceeding 90 days.

SEC. 16. No person shall in any manner interfere with, prevent, or hinder any officer or person herein mentioned in the performance of any duty required by this ordinance, and no person, not being the owner or possessor of such dog, shall remove or take off, or cause to be removed or taken off, the collar or tag upon any dog within the city.

SEC. 17. Any person or persons violating or failing, neglecting, or refusing to comply with any of the provisions of this ordinance, shall, when a penalty is not herein otherwise provided, be punished by fine not exceeding \$50, or by imprisonment not exceeding 30 days for each and every offense.

SEC. 18. All ordinances and parts of ordinances in conflict with this ordinance are hereby repealed. (Ordinance adopted Mar. 21, 1911.)

PLAGUE-PREVENTION WORK.

PLAGUE-INFECTED GROUND SQUIRREL FOUND IN CALIFORNIA.

During the week ended October 7, 1911, the finding of one plague-infected ground squirrel was reported. The squirrel was found in Contra Costa County, Cal., September 23, at East Richmond Oil Co. land, 1 mile north of Richmond.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 3,853 acres of land in Alameda County and 950 acres in Contra Costa County were covered with poison during the week ended October 7, 1911.

During the same period 3,780 acres of land in San Joaquin County and 1,660 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

Record of Plague Infection.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco.....	Jan. 30, 1908.....	Oct. 23, 1908.....	None.....	398 rats.
Oakland.....	Aug. 9, 1911.....	Dec. 1, 1908.....	do.....	126 rats.
Berkeley.....	Aug. 27, 1907.....	None.....	do.....	None.
Los Angeles.....	Aug. 11, 1908.....	do.....	Aug. 21, 1908.....	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).....	Sept. 26, 1909.....	{Wood rat, Oct. 17, 1909.	}Aug. 9, 1911.....	{108 squirrels. 1 wood rat.
Contra Costa.....	July 21, 1911.....	None.....	Sept. 23, 1911.....	364 squirrels.
Merced.....	None.....	do.....	July 13, 1911.....	5 squirrels.
Monterey.....	do.....	do.....	Aug. 6, 1911.....	5 squirrels.
San Benito.....	June 5, 1910.....	do.....	June 8, 1911.....	22 squirrels.
San Joaquin.....	Sept. 18, 1911.....	do.....	Aug. 26, 1911.....	18 squirrels.
San Luis Obispo.....	None.....	do.....	Jan. 29, 1910.....	1 squirrel.
Santa Clara.....	Aug. 23, 1910.....	do.....	Oct. 5, 1910.....	23 squirrels.
Santa Cruz.....	None.....	do.....	May 17, 1910.....	3 squirrels.
Stanislaus.....	do.....	do.....	June 2, 1911.....	13 squirrels.
Washington:				
City—				
Seattle.....	Oct. 30, 1907.....	Sept. 21, 1911.....	None.....	25 rats.

Rats Collected and Examined for Plague Infection.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley.....	Oct. 7, 1911		1 112	69	None.
Oakland.....	do.	35	2 600	565	None.
San Francisco.....	do.	17	1 577	1,117	None.
Ships—					
Steamer Coos Bay.....	do.		4 107	107	None.
Counties—					
Glenn.....	do.		3	3	None.
San Joaquin.....	do.		6 108	108	None.
Washington:					
Cities—					
Seattle.....	do.		1,024	915	None.

¹ Identified, *Mus norvegicus* 78, *Mus musculus* 34.

² Identified, *Mus norvegicus* 516, *Mus musculus* 82, *Mus rattus* 2.

³ Identified, *Mus norvegicus* 943, *Mus musculus* 331, *Mus rattus* 170, *Mus alexandrinus* 133.

⁴ Identified, *Mus rattus* 8, *Mus alexandrinus* 99.

⁵ Identified, *Mus alexandrinus* 3.

⁶ Identified, *Mus alexandrinus* 69, *Mus musculus* 39.

Squirrels Collected and Examined for Plague Infection.

Places.	Week ended.	Shot or trapped.	Found dead.	Examined.	Found infected.
California:					
Counties—					
Alameda.....	Oct. 7	46	22	68	None.
Butte.....	do.	155		101	None.
Colusa.....	do.	97		97	None.
Contra Costa.....	do.	70	23	93	1
Glenn.....	do.	314		204	None.
Kern.....	do.	40		40	None.
Lake.....	do.	86		86	None.
Merced.....	do.	125		125	None.
San Benito.....	do.	80		80	None.
San Joaquin.....	do.	106	42	148	None.
Shasta.....	do.	31		31	None.
Sonoma.....	do.	76		76	None.
Stanislaus.....	do.	277	10	287	None.
Sutter.....	do.	24	1	25	None.
Yolo.....	do.	214		214	None.
Oregon:					
Counties—					
Jackson.....	do.	2		2	None.
Total.....		1,743	98	1,677	1

Other Animals Collected and Examined.

Places.	Week ended.	Animals collected.	Examined.	Found infected.
California:				
Counties—				
Glenn.....	Oct. 7	4 rabbits, 1 wood rat.....	5	None.
Kern.....	do.	1 rabbit.....	1	None.
Merced.....	do.	5 rabbits, 1 gopher.....	6	None.
San Joaquin.....	do.	7 rabbits.....	7	None.
Shasta.....	do.	2 rabbits.....	2	None.
Stanislaus.....	do.	16 rabbits.....	16	None.
Sutter.....	do.	1 rabbit.....	1	None.
Total.....			38	0

SMALLPOX IN THE UNITED STATES.

In the following tables the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported throughout the State.

Reports Received During Week Ended Oct. 27, 1911.

Places.	Date.	Cases.	Deaths.	Remarks.
California.....				Report received out of date.
Counties—				
Los Angeles.....	July 1-31.....	2		
San Diego.....	do.....	1		
San Francisco.....	do.....	1		
Ventura.....	do.....	1		
Total for State.....		5		
Kansas:				
Counties—				
Brown.....	Aug. 1-31.....	5		
Clark.....	do.....	2		
Douglas.....	do.....	1		
Harvey.....	do.....	3		
Jewel.....	do.....	2		
Lyon.....	do.....	1		
Labette.....	do.....	1		
Republic.....	do.....	4		
Saline.....	do.....	1		
Shawnee.....	do.....	24	6	
Wyandotte.....	do.....	1		
Total for State.....		45	6	
Massachusetts:				
County—				
Bristol.....	Sept. 1-30.....	1		
Nebraska:				
Lincoln.....	do.....	1		
New Hampshire.....	June 9-Sept. 30....	45		
North Carolina:				
Counties—				
Anson.....	Sept. 1-30.....	16		
Catawba.....	do.....	1		
Cumberland.....	do.....	2		
Forsyth.....	do.....	1		
Granville.....	do.....	6		
Harnett.....	do.....	1		
Haywood.....	do.....	1		
Hoke.....	do.....	1		
Lincoln.....	do.....	1		
Mecklenburg.....	do.....	3		
Mitchell.....	do.....	1		
Randolph.....	do.....	1		
Robeson.....	do.....	12		
Rockingham.....	do.....	2		
Vance.....	do.....	8		
Yancey.....	do.....	2		
Total for State.....		59		
Utah:				
Counties—				
Carbon.....	Sept. 1-30.....	5		
Emery.....	do.....	5		
Juab.....	do.....	1		
Salt Lake.....	do.....	1		
Sanpete.....	do.....	30		
Sevier.....	do.....	2		
Uintah.....	do.....	9		
Total for State.....		53		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received During Week Ended Oct. 27, 1911.

Places.	Date.	Cases.	Deaths.	Remarks.
Virginia:				
Counties—				
Augusta.....	Sept. 1-30.....	3	.....
Chesterfield.....	do.....	1	.....
Grayson.....	do.....	2	.....
Nansemond.....	do.....	3	.....
Southampton.....	do.....	3	.....
Spottsylvania.....	do.....	1	.....
Total for State.....		13	.....

Reports Received from July 1 to Oct. 20, 1911.

[For reports received from Dec. 31, 1910, to June 30, 1911, see Public Health Reports for June 30, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

Places.	Date.	Cases.	Deaths.	Remarks.
*Alabama:				
Mobile.....	June 18-24.....	3	.....
Montgomery.....	June 25-Aug. 30...	6	.....
Total for State.....		9	.....
Arizona:				
County—				
Cochise.....	July 1-31.....	7	.....	Aug. 1-31, no cases.
California:				
Counties—				
Alameda.....	Aug. 1-31.....	1	.....
Fresno.....	do.....	4	.....
Los Angeles.....	May 1-Aug. 31....	9	.....
Sacramento.....	Aug. 1-31.....	1	.....
San Bernardino.....	do.....	2	.....
Santa Cruz.....	May 1-31.....	1	.....
San Diego.....	do.....	1	.....
San Francisco.....	May 1-Aug. 31....	4	.....
San Joaquin.....	Aug. 1-31.....	2	.....
Siskiyou.....	do.....	1	.....
Tulare.....	do.....	1	.....
Ventura.....	do.....	1	.....
Total for State.....		25	2	
Colorado:				
Counties—				
Archuleta.....	Aug. 1-31.....	1	.....
Boulder.....	June 1-July 31....	3	.....
Chaffee.....	June 1-30.....	3	.....
Clear Creek.....	June 1-July 31....	8	.....
Conejos.....	do.....	4	.....
Costilla.....	June 1-30.....	1	.....
Delta.....	do.....	7	.....
Denver.....	June 1-Sept. 20...	37	.....
Fremont.....	Aug. 1-31.....	2	.....
El Paso.....	June 1-30.....	2	.....
Huerfano.....	June 1-Aug. 31....	7	.....
Jefferson.....	Aug. 1-31.....	1	.....
Kiowa.....	July 1-Sept. 30...	7	.....
Lake.....	June 1-Sept. 30...	10	.....
La Plata.....	June 1-July 31....	7	.....
Larimer.....	June 1-Aug. 31....	10	.....
Las Animas.....	Aug. 1-31.....	1	.....
Lincoln.....	June 1-30.....	2	.....
Mesa.....	do.....	1	.....
Morgan.....	Aug. 1-31.....	3	.....
Montrose.....	July 1-31.....	2	.....
Otero.....	do.....	1	.....
Phillips.....	do.....	1	.....
Pueblo.....	June 1-Sept. 30...	8	.....
San Miguel.....	June 1-30.....	1	.....
Summit.....	Sept. 1-30.....	4	.....
Washington.....	June 1-July 31....	11	.....
Weld.....	July 1-Sept. 30...	2	.....
Total for State.....		147	.....

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from July 1 to Oct. 20, 1911.

Places.	Date.	Cases.	Deaths.	Remarks.
Connecticut, entire State.....				May 1-31, no cases.
Middlesex County.....	July 1-Aug. 31....	2		
District of Columbia.....	July 2-8.....	5		
Florida:				
Counties—				
Alachua.....	Aug. 20-26.....	3		
Bradford.....	July 17-Sept. 30....	8		
Citrus.....	July 9-22.....	2		
Columbia.....	July 2-8.....	1		
De Soto.....	June 16-Aug. 26....	7		
Duval.....	June 16-Sept. 23....	44	1	
Escambia.....	June 16-Aug. 26....	7		
Gadsden.....	July 9-Sept. 23....	72		
Hillsboro.....	June 16-Aug. 26....	3		
Jackson.....	July 2-Sept. 30....	57		
Jefferson.....	Sept. 16-23.....	20		
Leon.....	June 16-July 8.....	11		
Levy.....	July 9-16.....	1		
Madison.....	Sept. 10-16.....	2		
Manatee.....	June 16-July 8.....	8		
Marion.....	July 9-Sept. 16....	2		
Orange.....	June 16-July 16....	2		
Pasco.....	July 9-16.....	20		
Polk.....	June 16-July 16....	5		
Santa Rosa.....	July 9-16.....	6		
Sumter.....	Aug. 1-6.....	1		
Volusia.....	July 9-16.....	1		
Washington.....	Aug. 1-26.....	8		
Total for State.....		291	1	
Indiana:				
Counties—				
Adams.....	Aug. 1-31.....	1		
Allen.....	June 1-30.....	1		
Bartholomew.....	July 1-31.....	1		
Benton.....	June 1-30.....	2		
Blackford.....	do.....	4		
Boone.....	Aug. 1-31.....	1		
Cass.....	do.....	1		
Clarke.....	July 1-31.....	2		
Clinton.....	June 1-30.....	7		
Delaware.....	June 1-Aug. 31....	14		
Franklin.....	July 1-31.....	1		
Henry.....	June 1-Aug. 31....	2		
Howard.....	do.....	41		
Jay.....	June 1-30.....	2		
Lake.....	Aug. 1-31.....	3		
Laporte.....	June 1-30.....	2		
Madison.....	June 1-Aug. 31....	21		
Marion.....	do.....	4		
Orange.....	Aug. 1-31.....	2		
Parke.....	June 1-July 31....	4		
Posey.....	June 1-30.....	3		
Rush.....	Aug. 1-31.....	3		
Shelby.....	June 1-30.....	3		
Tippecanoe.....	July 1-31.....	2		
Tipton.....	June 1-Aug. 31....	6		
Vanderburg.....	do.....	1	1	
Vigo.....	July 1-31.....	8		
Wabash.....	June 1-30.....	2		
Wayne.....	June 1-July 31....	13		
Total for State.....		157	1	
Iowa:				
Counties—				
Adams.....	June 1-July 31....	19		
Appanoose.....	June 1-30.....	1		
Blackhawk.....	do.....	4		
Carroll.....	do.....	1		
Davis.....	do.....	3		
Decatur.....	June 1-July 31....	2		
Fremont.....	June 1-Sept. 30....	11		
Henry.....	June 1-30.....	2		
Johnson.....	July 1-31.....	13		
Lee.....	June 1-30.....	1		
Linn.....	July 1-Aug. 31....	9		
Madison.....	Sept. 1-30.....	1		
Marshall.....	June 1-Aug. 31....	9		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from July 1 to Oct. 20, 1911.

Places.	Date.	Cases.	Deaths.	Remarks.
Iowa—Continued.				
Counties—Continued.				
Mills.....	June 1-30.....	1		
Polk.....	June 1-Sept. 30.....	14		
Pottawattamie.....	do.....	42		
Scott.....	do.....	7		
Sioux.....	June 1-July 31.....	8		
Taylor.....	do.....	9		
Wapello.....	June 1-Aug. 31.....	5		
Wright.....	June 1-30.....	1		
Woodbury.....	July 1-31.....	1		
Total for State.....		164	1	
Kansas:				
Counties—				
Allen.....	May 1-31.....	7		
Anderson.....	June 1-30.....	15		
Atchison.....	May 1-June 30.....	2		
Barton.....	do.....	8		
Clark.....	July 1-31.....	1		
Clay.....	May 1-31.....	1		
Cloud.....	do.....	1		
Crawford.....	May 1-July 31.....	19		
Dickinson.....	May 1-31.....	13		
Doniphan.....	do.....	15		
Douglas.....	May 1-July 31.....	4		
Elk.....	May 1-31.....	15		
Ellsworth.....	June 1-30.....	1		
Franklin.....	May 1-31.....	4		
Graham.....	May 1-June 30.....	3		
Harvey.....	May 1-July 31.....	30		
Haskell.....	May 1-31.....	19		
Jefferson.....	May 1-July 31.....	9		
Jewell.....	July 1-31.....	5		
Johnson.....	May 1-June 30.....	5		
Kearny.....	June 1-July 31.....	2		
Labette.....	May 1-July 31.....	13		
Lane.....	June 1-30.....	11		
Leavenworth.....	May 1-June 30.....	3		
Lyon.....	July 1-30.....	2		
Marion.....	May 1-31.....	3		
Marshall.....	do.....	3		
Miami.....	do.....	3		
Mitchell.....	do.....	6		
Montgomery.....	do.....	5		
Norton.....	June 30.....	9		
Osage.....	May 1-31.....	1	3	
Pottawatomie.....	do.....	2		
Reno.....	do.....	3		
Republic.....	do.....	1		
Rice.....	June 30.....	13		
Riley.....	May 1-June 30.....	9		
Rooks.....	May 1-July 31.....	13		
Saline.....	May 1-June 30.....	7		
Sedgwick.....	May 1-July 31.....	12		
Shawnee.....	do.....	49	11	
Sherman.....	June 1-30.....	1		
Smith.....	May 1-31.....	18		
Thomas.....	do.....	2		
Washington.....	do.....	1		
Wyandotte.....	May 1-June 30.....	25		
Total for State.....		394	14	
*Kentucky:				
Covington.....	July 2-22.....	10		
Louisville.....	May 1-31.....	4		
Total for State.....		14		
*Louisiana:				
Parishes—				
Ascension.....	Mar. 1-31.....	21		
Morehouse.....	Apr. 1-30.....	4		
Orleans—				
New Orleans.....	June 25-Oct. 7.....	5		
St. Tammany.....	Mar. 1-31.....	3		
Tangipahoa.....	Mar. 1-Apr. 30.....	21		
Total for State.....		54		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from July 1 to Oct. 20, 1911.

Places.	Date.	Cases.	Deaths.	Remarks.
Maine, entire State.....				July 1-31, no cases.
Counties—				
Androscoggin.....	Aug. 1-31.....	3		
Somerset.....	June 1-30.....	3		
Total for State.....		6		
Maryland:				
Counties—				
Frederick.....	July 1-31.....	3		
Prince Georges.....	..do.....	1		
Washington.....	June 1-30.....	1		
Total for State.....		5		
Massachusetts.....				July 1-31, no cases.
County—				
Middlesex.....	June 1-30.....	1		
Michigan:				
Counties—				
Antrim.....	..do.....	2		
Calhoun.....	June 1-July 31.....	12		
Cheboygan.....	July 1-31.....	10		
Grand Traverse.....	June 1-Sept. 30.....	7		
Grafton.....	Aug. 1-Sept. 30.....	3		
Isabella.....	June 1-30.....	1		
Mackinac.....	June 1-Aug. 31.....	8		
Marquette.....	June 1-30.....	1		
Milford.....	July 1-31.....	1		
Montcalm.....	July 1-Aug. 31.....	8		
Muskegon.....	July 1-31.....	2		
Oakland.....	June 1-30.....	1		
Ottawa.....	..do.....	1		
Saginaw.....	Sept. 1-30.....	1		
St. Clair.....	June 1-Sept. 30.....	23		
Shiawassee.....	June 1-30.....	1		
Tuscola.....	Sept. 1-30.....	1		
Washtenaw.....	June 1-July 31.....	6		
Wayne.....	June 1-Sept. 30.....	9		
Total for State.....		98		
Minnesota:				
Counties—				
Ramsey.....	Mar. 1-31.....		1	
	May 1-31.....		1	
Brown.....	June 20-26.....	2		
Carver.....	June 1-5.....	1		
Dodge.....	July 4-Sept. 25.....	5		
Faribault.....	June 6-17.....	2		
Fillmore.....	June 6-12.....	1		
Goodhue.....	July 25-31.....	1		
Hennepin.....	June 1-Oct. 2.....	45		
Houston.....	July 25-31.....	1		
Lac qui Parle.....	June 1-19.....	4		
Mille Lacs.....	June 1-5.....	1		
Otertail.....	June 1-Sept. 18.....	8		
Ramsey.....	June 1-Oct. 2.....	59		
Redwood.....	Aug. 15-21.....	1		
Rock.....	Aug. 29-Sept. 4.....	1		
St. Louis.....	June 21-Sept. 18.....	13		
Wadena.....	July 11-Aug. 7.....	3		
Yellow Medicine.....	June 1-20.....	35		
Total for State.....		183	2	
*Missouri:				
Kansas City.....	June 1-Aug. 31.....	22	1	
St. Louis.....	June 18-Sept. 2.....	2		
Total for State.....		24		
Montana.....				June 1-30, no cases.
Counties—				
Beaverhead.....	July 1-31.....	1		
Cascade.....	..do.....	1		
Jefferson.....	..do.....	4		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from July 1 to Oct. 20, 1911.

Places.	Date.	Cases.	Deaths.	Remarks.	
Montana—Continued.					
Counties—Continued.					
Park.....	July 1-31.....	1			
Powell.....	do.....	2			
Silver Bow.....	do.....	3			
Teton.....	do.....	3			
Yellowstone.....	do.....	1			
Total for State.....		16			
*Nebraska:					
Lincoln.....	Feb. 1-June 30.....	200		July 1-31, no cases.	
Omaha.....	June 19-Aug. 19.....	4			
South Omaha.....	Aug. 20-26.....	1			
Total for State.....		205			
New Jersey.....					
County—					
Middlesex.....	July 1-31.....	1		No cases in June and August.	
New York.....					
Counties—					
Cattaraugus.....	July 1-Aug. 31.....	8			
Erie.....	June 1-July 31.....	18			
Clinton.....	June 1-30.....	1			
Franklin.....	do.....	1			
Jefferson.....	Aug. 1-31.....	1			
Monroe.....	June 1-30.....	4			
Onondaga.....	June 1-Aug. 31.....	10			
Otsego.....	June 1-30.....	1			
St. Lawrence.....	do.....	4			
Schoharie.....	July 1-31.....	11			
Steuben.....	July 1-Aug. 31.....	4			
Tioga.....	June 1-30.....	1			
Ulster.....	do.....	5			
Wayne.....	July 1-31.....	1			
Wyoming.....	do.....	1			
Total for State.....		72			
North Carolina:					
Counties—					
Alamance.....	June 1-July 31.....	2			
Avery.....	do.....	56			
Bertie.....	do.....	2			
Catawba.....	June 1-Aug. 31.....	2			
Chatham.....	do.....	2			
Craven.....	do.....	3			
Cumberland.....	do.....	7			
Currituck.....	July 1-31.....	1			
Duplin.....	do.....	3			
Durham.....	July 1-Aug. 31.....	5			
Edgecombe.....	June 1-30.....	4			
Granville.....	July 1-Aug. 31.....	23			
Guilford.....	Aug. 1-31.....	3			
Harnett.....	do.....	2			
Haywood.....	June 1-30.....	3			
Henderson.....	do.....	4			
Johnston.....	July 1-31.....	1			
McDowell.....	Aug. 1-31.....	1			
Mecklenburg.....	July 1-Aug. 31.....	7			
New Hanover.....	June 1-July 31.....	7			
Pasquotank.....	June 1-30.....	2			
Robeson.....	July 1-Aug. 31.....	4			
Rowan.....	June 1-July 31.....	2			
Sampson.....	July 1-31.....	1			
Vance.....	Aug. 1-31.....	12			
Warren.....	July 1-Aug. 31.....	11			
Watauga.....	June 1-30.....	2			
Wayne.....	July 1-31.....	1			
Wilmington.....	do.....	3			
Total for State.....		176			

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from July 1 to Oct. 20, 1911.

Places.	Date.	Cases.	Deaths.	Remarks.
North Dakota:				
Counties—				
Billings.....	June 1-July 31....	8		
Cass.....	Aug. 1-Sept. 30....	5		
Cavalier.....	Sept. 1-30.....	4		
Grand Forks.....	do.....	2		
Lamoure.....	July 1-Sept. 30....	7		
McKenzie.....	Aug. 1-31.....	1		
Morton.....	June 1-30.....	1		
Mountrail.....	do.....	6		
Nelson.....	Aug. 1-31.....	4		
Ward.....	June 1-30.....	1		
Total for State.....		39		
Ohio:				
Counties—				
Ashtabula.....	June 1-July 31....	3		
Brown.....	June 1-30.....	4		
Clark.....	July 1-31.....	19		
Clermont.....	June 1-30.....	3		
Defiance.....	do.....	1		
Franklin.....	July 1-31.....	44		
Geauga.....	June 1-30.....	2		
Hamilton.....	July 1-Aug. 31....	19		
Licking.....	July 1-31.....	1		
Lorain.....	do.....	5		
Lucas.....	July 1-Aug. 31....	6		
Pickaway.....	July 1-31.....	3		
Ross.....	Aug. 1-31.....	9		
Sandusky.....	June 1-30.....	4		
Total for State.....		123		
Oklahoma:				
Counties—				
Bryan.....	June 1-30.....	1		
Caddo.....	May 1-31.....	1		
Carter.....	June 1-30.....	1		
Cleveland.....	May 1-June 30....	49		
Comanche.....	June 1-Aug. 31....	9		
Craig.....	June 1-30.....	6		
Custer.....	May 1-31.....	5		
Dewey.....	do.....	6		
Ellis.....	June 1-30.....	3		
Garvin.....	May 1-31.....	19		
Haskell.....	May 1-July 31....	9		
Hughes.....	May 1-Aug. 31....	9		
Jefferson.....	May 1-June 30....	7		
Johnson.....	May 1-31.....	3		
Kay.....	do.....	6		
Kingfisher.....	do.....	1		
Kiowa.....	do.....	1		
La Flore.....	May 1-June 30....	3		
Logan.....	June 1-30.....	1		
McClain.....	May 1-31.....	18		
McIntosh.....	do.....	1		
Nowata.....	May 1-June 30....	2		
Okfuskee.....	May 1-31.....	1		
Oklahoma.....	May 1-June 30....	10		
Pittsburg.....	June 1-30.....	1		
Pontotoc.....	May 1-31.....	5		
Pottawatomie.....	June 1-30.....	3		
Pushmataha.....	May 1-31.....	2		
Roger Mills.....	May 1-June 30....	6		
Rogers.....	July 1-31.....	1		
Seminole.....	May 1-June 30....	16		
Sequoyah.....	Aug. 1-31.....	3		
Tulsa.....	May 1-Aug. 31....	11		
Wagoner.....	May 1-31.....	1		
Washington.....	June 1-30.....	1		
Washita.....	May 1-June 30....	2		
Woodward.....	May 1-31.....	1		
Total for State.....		225		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from July 1 to Oct. 20, 1911.

Places.	Date.	Cases.	Deaths.	Remarks
Oregon:				
Counties—				
Baker.....	June 1-30.....	1		
Benton.....	May 1-31.....	1		
Cass.....	Aug. 1-31.....	1		
Douglas.....	Apr. 1-30.....	1		
Grant.....	Aug. 1-31.....	3		
Josephine.....	do.....	1		
Linn.....	Apr. 1-July 31.....	2		
Morrow.....	May 1-31.....	1		
Multnomah.....	Apr. 1-July 31.....	15		
Union.....	June 1-30.....	1		
Wasco.....	do.....	8		
Washington.....	Apr. 1-June 30.....	7		
Yamhill.....	June 1-30.....	1		
Total for State.....		43		
Pennsylvania.....	May 1-June 30....	79		
*Rhode Island:				
Providence.....	June 15-July 14...	3		
*South Carolina:				
Port Royal.....	July 22.....	1		
South Dakota:				
Counties—				
Aurora.....	June 1-July 31.....	3		
Beadle.....	May 1-31.....	13		
Brookings.....	Apr. 1-30.....	9		
Brown.....	Apr. 1-June 30.....	10		
Brule.....	Apr. 1-May 21.....	6		
Charles Mix.....	June 1-30.....	1		
Codington.....	June 1-Aug. 31.....	8		
Davison.....	May 1-July 31.....	7		
Day.....	June 1-30.....	1		
Dewey.....	June 1-Aug. 31.....	5		
Fall River.....	Apr. 1-May 31.....	18		
Grant.....	do.....	4		
Hanson.....	May 1-31.....	1		
Hughes.....	June 1-30.....	1		
Hutchinson.....	Apr. 1-Aug. 31.....	2		
Jerauld.....	May 1-June 30.....	6		
Kingsbury.....	Apr. 1-May 31.....	8		
Lawrence.....	Apr. 1-July 31.....	7		
Lincoln.....	do.....	1		
Lyman.....	Apr. 1-May 31.....	16	1	
McCook.....	do.....	11		
Miner.....	Apr. 1-June 30.....	5		
Minnehaha.....	do.....	15		
Pennington.....	do.....	48		
Sanborn.....	May 1-31.....	3		
Spink.....	Apr. 1-Aug. 31.....	9		
Tripp.....	Apr. 1-June 30.....	7		
Turner.....	July 1-31.....	5		
Total for State.....		230	1	
*Tennessee:				
Counties—				
Knox.....				
Knoxville.....	June 18-July 22.....	9		
Shelby.....	June 1-Aug. 31.....	10		
Total for State.....		19		
Texas.....				
	May 1-31.....	12		
	July 1-31.....	1	1	
Counties—				
Brazoria.....	Aug. 1-31.....	2		
Bell.....	June 1-30.....	2		
Cameron.....	May 1-Aug. 31.....	34		
Childress.....	June 1-30.....	1		
Collin.....	May 1-31.....	5		
Dallas.....	do.....	13		
Denton.....	do.....	1		
Denton.....	Apr. 1-30.....	4		
Eastland.....	Aug. 1-31.....	5		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from July 1 to Oct. 20, 1911.

Places.	Date.	Cases.	Deaths.	Remarks.
Texas—Continued.				
Counties—Continued.				
El Paso.....	May 1-July 31.....	11	.....
Floyd.....	May 1-31.....	3	.....
Galveston.....	May 1-June 30.....	7	.....
Hall.....	do.....	4	.....
Harris.....	May 1-Aug. 31.....	6	.....
Hidalgo.....	May 1-31.....	3	.....
Hunt.....	June 1-July 31.....	5	.....
Marion.....	May 1-31.....	1	.....
McLennan.....	do.....	1	.....
Navarro.....	do.....	32	.....
Nueces.....	do.....	5	.....
Tarrant.....	May 1-June 30.....	9	.....
Titus.....	May 1-31.....	5	.....
Victoria.....	July 1-31.....	1	.....
Wayne.....	June 1-30.....	5	.....
Wichita.....	May 1-31.....	6	.....
Total for State.....		184	1	
Utah:				
Counties—				
Beaver.....	May 1-July 31.....	18	.....
Boxelder.....	do.....	31	.....
Cache.....	May 1-June 30.....	14	.....
Carbon.....	May 1-Aug. 31.....	113	2	
Emery.....	do.....	88	1	
Garfield.....	do.....	20	.....
Juab.....	July 1-Aug. 31.....	5	.....
Plute.....	May 1-31.....	9	.....
Rich.....	July 1-31.....	16	.....
Salt Lake.....	May 1-Aug. 31.....	40	.....
Sanpete.....	do.....	35	.....
Sevier.....	do.....	48	.....
Tooele.....	May 1-June 30.....	33	.....
Uinta.....	May 1-Aug. 31.....	9	.....
Utah.....	May 1-July 31.....	18	1	
Washington.....	do.....	1	.....
Weber.....	do.....	11	.....
Total for State.....		509	4	
Virginia:				
Counties—				
Augusta.....	Aug. 1-31.....	1	.....
Brunswick.....	Mar. 1-May 31.....	49	.....
Campbell.....	May 1-Aug. 31.....	2	.....
Dinwiddie.....	Apr. 1-May 31.....	19	.....
Essex.....	Aug. 1-31.....	1	.....
Fairfax.....	Mar. 1-Aug. 31.....	6	.....
Fauquier.....	Apr. 1-May 30.....	6	.....
Greenville.....	July 1-31.....	4	.....
Halifax.....	Aug. 1-31.....	1	.....
Hanover.....	Mar. 1-July 31.....	3	.....
Henrico.....	Mar. 1-Aug. 31.....	17	.....
Henry.....	do.....	77	.....
Isle of Wight.....	May 1-31.....	1	.....
Lancaster.....	do.....	1	.....
Lee.....	Mar. 1-Aug. 31.....	107	.....
Loudoun.....	Mar. 1-31.....	1	.....
Mecklenburg.....	Mar. 1-June 30.....	18	.....
Nansemond.....	Mar. 1-Aug. 31.....	24	.....
Norfolk.....	Apr. 1-May 31.....	26	.....
Northampton.....	Apr. 1-30.....	1	.....
Page.....	do.....	8	.....
Pittsylvania.....	Mar. 1-July 31.....	46	.....
Prince William.....	Mar. 1-31.....	1	.....
Princess Anne.....	do.....	1	.....
Roanoke.....	May 1-31.....	1	.....
Southampton.....	Mar. 1-Apr. 30.....	9	.....
Surry.....	Mar. 1-31.....	2	.....
Sussex.....	Mar. 1-June 30.....	7	.....
Wise.....	do.....	15	.....
Total for State.....		455	.....

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received from July 1 to Oct. 20, 1911.

Places.	Date.	Cases.	Deaths.	Remarks.
Washington:				
Counties—				
Adams.....	June 1-30.....	1		
Benton.....	July 1-31.....	2		
Chehalis.....	May 1-July 31.....	4		
Chelan.....	do.....	2		
Clallam.....	June 1-30.....	2		
Columbia.....	May 1-31.....	5		
Cowlitz.....	May 1-July 31.....	4		
Garfield.....	do.....	5		
King.....	May 1-June 30.....	78		
Kitsap.....	June 1-30.....	2		
Kittitas.....	July 1-31.....	2		
Lewis.....	June 1-30.....	2		
Mason.....	May 1-June 30.....	33		
Okanogan.....	June 1-30.....	2		
Pierce.....	May 1-July 31.....	11		
San Juan.....	May 1-31.....	1		
Skagit.....	May 1-July 31.....	5		
Skamania.....	June 1-30.....	1		
Spokane.....	May 1-July 31.....	9		
Thurston.....	May 1-31.....	1		
Whatcom.....	do.....	5		
Whitman.....	do.....	17		
Yakima.....	May 1-July 31.....	69		
Total for State.....		263		
Wisconsin:				
Counties—				
Ashland.....	June 1-30.....	1		
Barron.....	June 1-Aug. 31.....	4		
Douglas.....	June 1-Sept. 30.....	22		
Iowa.....	June 1-30.....	8		
Milwaukee.....	June 1-30.....	1		
Pierce.....	Aug. 1-Sept. 30.....	10		
Vilas.....	June 1-30.....	1		
Wood.....	June 1-Sept. 30.....	11		
Total for State.....		58		
Grand total for the United States.....		4 291	28	July 1-31, no cases.

PLAGUE IN THE UNITED STATES.

Reports Received from July 25 to Oct. 20, 1911.

Places.	Date.	Cases.	Deaths.	Remarks.
California:				
Counties—				
Alameda—				
Oakland.....	Aug. 9.....	1		Infection received at Pinole Canyon, Contra Costa County, Cal.
Contra Costa.....	July 25-26.....	1	1	1 mile nw. of Lafayette.
San Joaquin.....	Sept. 18.....	1		2 miles ne. of Ripon.

MORBIDITY AND MORTALITY.

Morbidity and Mortality Table, Cities of the United States, for Week ended Oct. 7, 1911.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Small- pox.		Tuber- culosis.		Ty- phoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md.	558,485	164	13	1	26	2	36	27	60	3	3	5	3	
Boston, Mass.	670,585	189	36	2	19	25	39	19	23	2	2	1	1	
Chicago, Ill.	2,185,283	463	160	17	16	72	5	148	51	47	10	10	10	
Cleveland, Ohio.	560,663	149	34	4	6	3	36	38	11	20	4	4	4	
New York, N. Y.	4,766,883	1,204	176	20	75	65	388	136	92	11	11	11	11	
Philadelphia, Pa.	1,549,008	399	69	9	2	1	26	90	53	40	6	6	6	
Pittsburgh, Pa.	533,906	110	28	2	5	11	19	4	7	1	1	1	1	
St. Louis, Mo.	687,029	154	41	2	3	1	29	12	22	4	4	4	4	
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y.	423,715	79	29	1	21	6	3	5	3	3	3	3	3	
Cincinnati, Ohio.	364,463	101	22	1	1	20	3	32	11	11	1	1	1	
Detroit, Mich.	465,766	119	26	2	14	1	11	16	8	6	6	6	6	
Los Angeles, Cal.	319,198	52	4	1	8	1	29	9	9	1	1	1	1	
Milwaukee, Wis.	373,857	97	13	3	24	1	11	16	8	6	6	6	6	
Newark, N. J.	347,469	78	27	1	12	1	37	8	6	2	2	2	2	
New Orleans, La.	339,075	134	11	1	13	1	25	13	11	1	1	1	1	
San Francisco, Cal.	416,912	118	3	28	6	33	10	32	1	1	1	1	1	
Washington, D. C.	331,069	129	29	1	1	13	11	26	3	3	3	3	3	
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo.	213,381	50	36	2	7	1	7	3	3	3	3	3	3	
Jersey City, N. J.	267,779	84	9	1	2	5	12	4	8	1	1	1	1	
Providence, R. I.	224,326	36	2	1	1	1	10	3	4	1	1	1	1	
Seattle, Wash.	237,194	36	2	1	1	1	10	3	4	1	1	1	1	
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn.	102,054	15	2	1	1	1	3	1	1	1	1	1	1	
Cambridge, Mass.	104,839	30	6	4	6	2	4	3	2	2	2	2	2	
Columbus, Ohio.	181,548	45	6	1	9	1	6	3	2	2	2	2	2	
Dayton, Ohio.	116,577	35	1	1	1	1	4	1	10	1	1	1	1	
Fall River, Mass.	119,295	35	1	1	2	1	4	1	10	1	1	1	1	
Grand Rapids, Mich.	112,571	20	1	1	3	3	4	3	3	3	3	3	3	
Lowell, Mass.	106,294	35	6	1	3	5	3	1	1	1	1	1	1	
Nashville, Tenn.	110,364	47	6	2	6	7	4	12	1	1	1	1	1	
Omaha, Nebr.	124,096	10	2	2	1	1	2	1	4	1	1	1	1	
Spokane, Wash.	104,402	5	2	2	10	6	6	1	15	2	2	2	2	
Toledo, Ohio.	168,497	55	14	1	13	5	1	14	2	2	2	2	2	
Worcester, Mass.	145,986	36	9	1	1	1	1	1	1	1	1	1	1	
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa.	52,127	8	2	1	1	3	2	3	2	2	2	2	2	
Bayonne, N. J.	55,545	11	2	1	1	4	3	1	1	1	1	1	1	
Brockton, Mass.	56,878	14	4	2	1	2	1	1	1	1	1	1	1	
Camden, N. J.	94,538	11	7	1	3	1	1	1	1	1	1	1	1	
Duluth, Minn.	78,466	26	4	1	1	2	2	3	1	1	1	1	1	
Elizabeth, N. J.	73,409	11	1	1	3	1	1	1	1	1	1	1	1	
Erie, Pa.	66,525	20	3	1	1	1	1	1	1	1	1	1	1	
Evansville, Ind.	69,647	13	4	1	1	1	1	1	1	1	1	1	1	
Harrisburg, Pa.	64,186	36	2	1	6	5	3	2	2	2	2	2	2	
Hartford, Conn.	98,915	31	1	1	2	2	6	2	2	2	2	2	2	
Houston, Tex.	78,800	21	5	1	3	3	1	1	1	1	1	1	1	
Johnstown, Pa.	55,482	27	2	1	1	3	1	2	1	1	1	1	1	
Kansas City, Kans.	82,331	13	5	1	3	3	1	1	1	1	1	1	1	
Lawrence, Mass.	85,892	27	2	1	1	3	1	2	1	1	1	1	1	
Lynn, Mass.	89,336	13	5	1	3	3	4	1	5	1	1	1	1	
Manchester, N. H.	70,063	27	7	1	1	1	1	1	1	1	1	1	1	
Mobile, Ala.	51,521	28	6	1	2	2	4	2	1	1	1	1	1	
New Bedford, Mass.	96,652	20	1	1	1	1	1	2	1	1	1	1	1	
Oklahoma City, Okla.	64,205	25	1	1	1	1	1	1	9	3	3	3	3	
Passaic, N. J.	54,773	20	5	1	2	1	1	1	1	1	1	1	1	

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended October 7, 1911—Continued.

Cities.	Popula- tion, United States census 1910.	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Small- pox.		Tuber- culosis.		Ty- phoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Con.														
Reading, Pa.	96,071	19	8	1			8				4	1	5	
San Antonio, Tex.	96,614	31	4				1		1		6	4		3
Schenectady, N. Y.	72,826	13	1				3				6	1	2	
South Bend, Ind.	53,684	10	2				2							
Springfield, Ill.	51,678	15										1	5	
Springfield, Mass.	88,926	20	5		6						1	2	3	1
Terre Haute, Ind.	58,157	12	1				1				1		3	1
Trenton, N. J.	96,815	38	3	2			4				4	2	3	1
Wilkes-Barre, Pa.	67,105	24	4				1				5		2	
Wilmington, Del.	87,411	23		1								1		3
Yonkers, N. Y.	79,803	21	4		2		12					1		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J.	46,150	11	1				3							
Aurora, Ill.	29,807	12	1											
Berkeley, Cal.	40,434	3												1
Binghamton, N. Y.	48,443	17	1								1	2	2	
Brookline, Mass.	27,792	7					1					1	1	
Butte, Mont.	39,165	13					3					5		
Chattanooga, Tenn.	44,604						1						7	
Chelsea, Mass.	32,452	11	1											
Chicopee, Mass.	25,401	4					1				1			
Danville, Ill.	27,871	11	1											
Dubuque, Iowa.	38,494	8	9	2								2		
East Orange, N. J.	34,371	2									2	1	1	
Elmira, N. Y.	37,176	11	1		2		2				3		3	
Everett, Mass.	33,484	7	5									1	1	
Haverhill, Mass.	44,115	6	3										7	
Kalamazoo, Mich.	39,437	20	2				1					1	3	
Knoxville, Tenn.	36,346	8	2				1					3		
La Crosse, Wis.	30,417	7					2					1		
Lancaster, Pa.	47,227		3								1		1	
Lexington, Ky.	35,099	12	1									1	3	
Lima, Ohio	30,508		2				1							
Lynchburg, Va.	29,494	16	8		1		4				1		1	
Malden, Mass.	44,404	4	2	1			2						1	1
Montgomery, Ala.	38,136	16	9				3					1		1
Newcastle, Pa.	36,280	24	1				1						1	
Newport, Ky.	30,309	9	6				1					2		
Newton, Mass.	39,806	8			10		1				3		2	
Niagara Falls, N. Y.	30,445	9	8		1	1	1				1	1	3	
Norristown, Pa.	27,875	11	2								5			1
Orange, N. J.	29,630	12	8	2			4				1		1	1
Pasadena, Cal.	30,291	10										1		
Pittsfield, Mass.	32,121	8	4	1							2			
Portsmouth, Va.	33,190	9	2		1							2		
Rockford, Ill.	45,401	18	1						3		1		9	
Salem, Mass.	43,697	17												
San Diego, Cal.	39,578	21									2	1		
South Omaha, Nebr.	26,259	7	2											
Superior, Wis.	40,384	18	9	1			1		1			1		1
Taunton, Mass.	34,259	15	1								1	2	1	1
Waltham, Mass.	27,834	4					1				1	1	1	
West Hoboken, N. J.	35,403	8	6									2		
Wheeling, W. Va.	41,641	16	14	2									1	
Williamsport, Pa.	31,860	6											1	
Wilmington, N. C.	25,748	17										2		1
York, Pa.	44,750		1								2		2	
Zanesville, Ohio.	28,026	11	4									1		
Cities having less than 25,000 inhabitants.														
Ann Arbor, Mich.	14,817	7	1				1					1		
Beaver Falls, Pa.	12,191		1				1						2	
Bennington, Vt.		2			5									

¹ Incomplete.

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended October 7, 1911—
Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diph- theria.	Measles.	Scarlet fever.	Small pox.	Tuber- culosis.	Ty- phoid fever.
			Cases. Deaths.	Cases. Deaths.	Cases. Deaths.	Cases. Deaths.	Cases. Deaths.	Cases. Deaths.
<i>Cities having less than 25,000 inhabitants—Continued.</i>								
Braddock, Pa.....	19,957	5	5		1		1	
Butler, Pa.....	20,728	7			1			4
Cambridge, Ohio.....	11,327	5			1		*1	1
Camden, S. C.....		2						
Carbondale, Pa.....	17,040	7	1		1			1
Clinton, Mass.....	13,075	2		1				1
Coffeyville, Kans.....	12,687	3	1	1				2
Columbus, Ga.....	20,554	10					1	1
Concord, N. H.....	21,497	7			1		2	12
Cumberland, Md.....	21,839	6	2				1	1
Dunkirk, N. Y.....		3	1					
Galesburg, Ill.....	22,089	4	2		1			1
Harrison, N. J.....	14,498	4	1	1				1
Hyde Park, Mass.....	15,507	5						1
Kearny, N. J.....	18,659	2	1					
La Fayette, Ind.....	12,081	8					1	
Lebanon, Pa.....	19,240		8	1				
Marinette, Wis.....	14,610	3						1
Mariaboro, Mass.....	14,579	5		3	1		1	2
Massillon, Ohio.....	13,879	7	1					
Medford, Mass.....	23,150	4		1			1	
Melrose, Mass.....	15,715	3			1		1	
Montclair, N. J.....	21,150	5	3		2		1	
Morristown, N. J.....	12,507	7			1		1	1
Nanticoke, Pa.....	18,877	4					1	1
Newburyport, Mass.....	19,940	4					1	
North Adams, Mass.....	22,019	2	1				2	3
Northampton, Mass.....	19,431	5						1
Ottumwa, Iowa.....	22,012	4			1			
Palmer, Mass.....		3	1	1				
Pekskill, N. Y.....		3						
Plainfield, N. J.....	20,550	6					2	2
Pottstown, Pa.....		2	1					
Rutland, Vt.....	13,546	6	2		1			
Saratoga Springs, N. Y.....		4					1	1
South Bethlehem, Pa.....	19,973	13	2				4	2
Steelton, Pa.....	14,246	4	9				1	
Warren, Ohio.....	11,080	1	1					
Wilkinsburg, Pa.....	18,924	7					3	1
Woburn, Mass.....	15,308	5						

FOREIGN AND INSULAR.

AUSTRALIA.

Sydney—Examination of Rats.

The following information was taken from bulletins issued by the department of public health of New South Wales:

During the four weeks ended September 8, 1911, 1,825 rats were examined for plague infection. No plague-infected rat was found.

The last case of human plague was reported May 25, 1909.

The last plague-infected rat was found April 25, 1910.

AUSTRIA-HUNGARY.

Summary of Cholera.

Chargé d'Affaires ad interim Grew, at Vienna, reports, September 27: From May 24 to September 17, 73 cases of cholera, with 30 deaths, were reported in Austrian territory, of which 5 cases with 2 deaths occurred at Vienna. From September 9 to 16 there occurred in Hungary 22 cases with 11 deaths. The majority of the cases in Hungary occurred among the personnel of vessels plying on the Danube River.

BULGARIA.

Measures Against Importation of Cholera.

Consul General Harvey, at Bucharest, Roumania, reports, September 11:

According to official information received from the Bulgarian foreign office the department of the interior and public health has issued an order declaring the entire Ottoman Empire to be infected with cholera and directing the application, as regards travelers and products from the Ottoman Empire, of the rules and regulations relative to the sanitary service on the frontier during danger of importation of cholera.

EAST AFRICA.

Plague.

Consul Weddell, at Zanzibar, reports, September 4:

From date of outbreak, May 26 to August 26, 39 cases of plague with 22 deaths were reported at Nairobi, and 57 cases with 43 deaths at Kisumu.

ECUADOR.

Plague and Yellow Fever.

The following information was received from the director of public health:

Month of September, 1911.

Plague.—At Guayaquil 37 cases with 12 deaths were reported.

Yellow fever.—At Bucay 1 case was reported; at Changüé, 1 case, with 1 death; at Guayaquil, 5 cases with 2 deaths; at Naranjito, 3 cases with 1 death.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910. The last plague-infected rat was found at Aiea, 9 miles from Honolulu, Apr. 12, 1910.

At Hilo the last case of human plague occurred March 23, 1910. A fatal case occurred at Honokaa, 60 miles from Hilo, April 20, 1911.

The last plague-infected rat was found at Honokaa February 2, 1911. A plague-infected rat was found at Hilo during the week ended June 10, 1911.

Chief Quarantine Officer Ramus reports, October 2:

Honolulu—Plague-Infection Work.

Week ended September 30, 1911.

Total rats and mongoose taken.....	744
Rats trapped.....	711
Mongoose trapped.....	33
Rats examined bacteriologically.....	651
Classification of rats trapped:	
<i>Mus alexandrinus</i>	68
<i>Mus musculus</i>	249
<i>Mus norvegicus</i>	69
<i>Mus rattus</i>	325
Average number of traps set daily.....	1,720

Examination for Cholera Bacillus Carriers.

Dr. Ramus reported October 4 that 52 steerage passengers on the steamship *Manchuria*, which arrived September 28 from oriental ports, were removed to the quarantine station and examined for possible cholera bacillus carriers. The results of the examinations were negative. Sixty-nine steerage passengers from the steamship *Chiyo Maru*, arrived from Kobe October 5, were removed to quarantine for examination.

Yellow Fever on Vessel.

Dr. Ramus reported October 21 that a case of yellow fever in the convalescent stage had that day arrived at Honolulu on the steamship *Hongkong Maru* from Manzanillo, Mexico.

INDIA.

Calcutta—Cholera and Plague.

Acting Assistant Surgeon Allan reports September 28:

During the week ended September 9, 21 deaths from cholera and 7 from plague were reported at Calcutta; in all Bengal, 14 cases of plague with 13 deaths; in all India, 8,002 cases of plague with 5,496 deaths.

ITALY.

Status of Cholera.

Acting Assistant Surgeon Buonocore, at Naples, reports October 3:

During the period from September 17 to 23 cholera was reported in Italy as follows: In all Italy, 664 cases with 280 deaths; Naples city, 14 cases with 4 deaths; Naples Province outside of Naples, 8 cases with 5 deaths; Genoa city, 5 cases; Genoa Province, 11 cases with 2

deaths; Palermo city, 37 cases with 15 deaths; Palermo Province, 18 cases with 13 deaths; Rome city, 10 cases with 4 deaths; Rome Province, 6 cases with 1 death; Catania city, 18 cases with 10 deaths; Catania Province, 41 cases with 23 deaths; Venice, 3 cases with 1 death; Chioggia, Province of Venice, 9 cases with 1 death; other parts of Italy, 484 cases with 201 deaths.

Naples—Examination of Emigrants.

Dr. Buonocore reports:

Vessels inspected at Naples week ended Sept. 30, 1911.

Date.	Name of ship.	Destination.	Steerage, passengers inspected and passed.	Pieces of baggage disinfected.	Pieces of second cabin baggage disinfected.
Sept. 27	Duca d'Aosta.....	New York....	399	705	60
29	Berlin.....	do.....	611	840	390
30	Sant' Anna.....	do.....	365	670	170
	Total		1,375	2,215	620

JAPAN.

Kobe—Cholera.

Acting Asst. Surg. Moore reports September 21:

A fatal case of cholera was reported at Kobe September 16, the origin of which has not yet been determined. The special quarantine regulations with respect to cholera have been put in force and are rigidly observed.

MEXICO.

Mexico City—Typhus Fever.

Consul General Shanklin reports that during the three weeks ended September 16, 104 cases of typhus fever with 25 deaths were reported in Mexico City.

Yellow Fever at Merida.

During the week ended October 7, 2 cases of yellow fever and 1 death were officially reported at Merida and during the week ended October 14, 3 cases with 1 death. The total number of cases since August 1, the date of the occurrence of the first case, is 35, with 13 deaths.

PHILIPPINE ISLANDS.

Cholera.

Acting Chief Quarantine Officer Fox at Manila reports, August 17 and September 12 and 20:

During the week ended August 12, 1 case of cholera occurred in the province of Laguna. During the week ended September 9, 11 cases with 8 deaths were reported in Union Province, and during the week ended September 16, in the same province, 6 cases with 7 deaths.

RUSSIA.**Status of Cholera.**

Information received from the American embassy at St. Petersburg, dated October 21, shows that since the date of the last report, October 7, 71 cases of cholera with 36 deaths have been reported in all Russia.

TURKEY.**Beirut Declared free from Cholera.**

Consul General Hollis reports that Beirut was declared free from cholera September 17.

Saloniki—Epidemic Cholera.

Vice Consul Binda reports September 11:

Cholera has appeared in epidemic form in this city. During the 24 hours, September 9-10, 51 cases with 24 deaths were reported.

Cholera is widely prevalent throughout Macedonia, especially in the towns of Monastir and Uskub. The disease has probably been spread by the movement of troops among whom cholera has been present.

Smyrna—Cholera and Plague.

Vice Consul General Memminger reports September 25:

During the week ended September 18, 17 cases of cholera with 9 deaths were reported at Smyrna.

On September 17 a fatal case of plague was reported and on September 22 a second case. Both cases occurred in employees of the German post office and are believed to have originated from a vessel arriving from ports south of Smyrna. The sanitary authorities have issued a circular requiring the destruction of rats on all vessels leaving the port of Smyrna.

URUGUAY.**Smallpox and Vaccination.**

Consul Goding at Montevideo reports September 6:

Smallpox has been reported in Uruguay every year since 1901, with a total of 5,926 cases with 1,287 deaths, of which 693 cases with 593 deaths occurred during the year 1910. Vaccination has been practiced, but has not been made compulsory. The number of vaccinations performed since 1901 is 109,464. The report of cases admitted to the pesthouse during the second quarter of 1910 shows 163 cases entered, with 82 deaths. Of these 30 were vaccinated (deaths 3), 119 not vaccinated (deaths 71), 11 had been vaccinated in childhood (deaths 5), and 3 had no record of vaccination. The percentage of deaths from smallpox in the interior is officially reported as much lower than that in the city of Montevideo.

The national department of hygiene has recommended a law rendering vaccination compulsory.

VENEZUELA.**Caracas—Plague and Yellow Fever.**

The following information was taken from the report of the sanitary commission dated October 4:

During the week ended September 23, 1 case of plague and 2 cases of yellow fever were reported at Caracas.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.**Reports Received During Week Ended Oct. 27, 1911.**

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State, and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay.....	Sept. 17-23.....	1	2	
Calcutta.....	Sept. 2-9.....		21	
Madras.....	Sept. 17-23.....	3	2	
Indo-China:				
Saigon.....	Aug. 28-Sept. 10.....	9	6	
Italy.....				Total, Sept. 17-23: Cases, 664; deaths, 280.
Provinces—				
Catania.....	Sept. 17-23.....	59	33	
Genoa.....	do.....	11	2	
Genoa.....	do.....	5		
Naples.....	do.....	8	5	
Naples.....	do.....	14	4	
Palermo.....	do.....	18	13	
Palermo.....	do.....	37	13	
Rome.....	do.....	16	5	
Venice.....	do.....	12	2	
28 other Provinces.....	do.....	484	201	
Java:				
Batavia.....	Sept. 3-9.....	12	5	
Japan:				
Kobe.....	Sept. 16.....		1	
Philippine Islands:				
Provinces—				
Laguna.....	Aug. 6-12.....	1		
Union.....	Sept. 3-16.....	17	15	
Russia.....				Total, Sept. 2-13: Cases, 369; deaths, 104. Sept. 30-Oct. 7: Cases, 71; deaths, 36.
Governments—				
Astrakhan.....	Sept. 3-13.....	119	43	
Baku.....	do.....	7	2	
Bessarabia.....	do.....	2		
Don Territory.....	do.....	9	2	
Khasan.....	do.....	3	2	
Novorossisk.....	do.....	2		
Perm.....	do.....	1	1	
Rostov on Don.....	do.....	16	3	
Samara.....	do.....	65	17	
Saratov.....	do.....	62	25	
Simbirsk.....	do.....	20	8	
Tambov.....	do.....	2	1	
Vitebsk.....	do.....	1		
Siam:				
Bangkok.....	Aug. 6-Sept. 4.....		61	

YELLOW FEVER.

Brazil:				
Manaos.....	Sept. 24-30.....		2	Oct. 20, 3 cases.
Pernambuco.....	Sept. 1-15.....		1	
Ecuador:				
Bucay.....	Sept. 1-14.....	1		
Changue.....	Sept. 16-30.....	1	1	
Guayaquil.....	Sept. 1-30.....	5	2	
Naranjito.....	Sept. 16-30.....	3	1	
Hawaii:				
Honolulu.....	Oct. 21.....	1		Arrived convalescent on s. s. Hongkong Maru from Manzanillo, Mex.
Mexico:				
Merida.....	Oct. 1-13.....	5	2	
Venezuela:				
Caracas.....	Sept. 10-23.....	4		

PLAGUE.

Brazil:				
Pernambuco.....	Sept. 1-15.....		2	
Chile:				
Iquique.....	Sept. 10-23.....	2	3	
China:				
Canton.....	Sept. 3-9.....	4		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received During Week Ended Oct. 27, 1911.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Ecuador:				
Guayaquil.....	Sept. 1-30.....	37	12	
India:				
Bombay.....	Sept. 17-23.....	21	18	
Calcutta.....	Sept. 3-9.....	7	7	
Karachi.....	Sept. 17-23.....	1	1	
Indo-China:				
Saigon.....	Aug. 28-Sept. 10..	12		And vicinity.
Java:				
Paseroean Residency.....	Sept. 3-9.....	25	10	
Siam:				
Bangkok.....	Aug. 6-Sept. 4.....		9	
Turkey in Asia:				
Smyrna.....	Sept. 17-22.....	2	1	
Venezuela:				
Caracas.....	Sept. 17-23.....	1		

SMALLPOX.

Brazil:				
Pernambuco.....	Sept. 1-15.....		130	
Canada:				
Quebec.....	Oct. 8-14.....	2		
Ceylon:				
Colombo.....	Sept. 3-16.....	3	1	
Chile:				
Valparaiso.....	Sept. 19-23.....	54		
China:				
Hongkong.....	Sept. 3-9.....	2	2	
France:				
Paris.....	Sept. 24-30.....	1		
Germany:				Total for Germany Oct. 1-7: Cases, 4.
Great Britain:				
Liverpool.....	Oct. 1-7.....	6		
India:				
Madras.....	Sept. 17-23.....	6	2	
Indo-China:				
Saigon.....	Aug. 28-Sept. 10..	10	4	
Italy:				
Genoa.....	Sept. 16-30.....	1		
Naples.....	Sept. 24-30.....	7		
Palermo.....	do.....	155	61	
Java:				
Batavia.....	Sept. 3-9.....	5		
Mexico:				
Aguascalientes.....	Oct. 2-8.....		1	
Cananea mines.....				Oct. 14, 25 cases remaining.
Mexico.....	Sept. 3-16.....	6	4	
San Luis Potosi.....	Sept. 17-23.....	2	3	
Tampico.....	Oct. 1-10.....		1	
Tapachula.....	July 8-Aug. 26.....		13	
Portugal:				
Lisbon.....	Sept. 17-30.....	12		
Russia:				
Moscow.....	Sept. 10-23.....	7	1	
Riga.....	Sept. 9-23.....	3		
St. Petersburg.....	Sept. 3-23.....	14	2	
Warsaw.....	July 16-Aug. 26.....	81	31	
Siam:				
Bangkok.....	Aug. 6-Sept. 4.....		34	
Spain:				
Madrid.....	Sept. 1-30.....		1	
Seville.....	do.....		3	
Valencia.....	Oct. 1-7.....	3		
Switzerland:				
Canton—				
Aargau.....	Sept. 24-30.....	4		
Straits Settlements:				
Penang.....	Sept. 3-16.....	3	1	
Turkey:				
Constantinople.....	Sept. 25-Oct. 1.....		3	
Turkey in Asia:				
Beirut.....	Sept. 24-30.....	30	10	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from July 1, to Oct. 20, 1911.

[For reports received from Dec. 31, 1910, to June 30, 1911, see Public Health Reports for June 30, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida.....	June 16-30.....	21	17	Among the civil and the military population. Aug. 5, present among troops.
Austria-Hungary.....				Total Austria-Hungary, May 24-Sept. 17, 73 cases, 30 deaths, District of Zara.
Arbe Salle Sampiero.....	Aug. 21-Sept. 17.....	6	3	
Budafolk.....	Sept. 9-16.....	1		
Budapest.....	Aug. 24-Sept. 16.....	12	3	
Capodistria.....	July 23-Sept. 10.....	9	5	
Cattaro.....	July 6-20.....	4	1	
Cittanuova.....	Aug. 21-27.....	1	1	
Czarp.....	Aug. 24-Sept. 9.....	1		
Druga.....	Sept. 7.....	1		
Fiume.....	Aug. 9-17.....	3		
Krimeja.....	Sept. 7.....	1		
Krizovljan.....	Aug. 28-Sept. 3.....	2		
Muggia.....	Aug. 7-13.....	2	1	
Nagykeszi.....	Sept. 9-16.....	3		
Suly.....	Sept. 2-9.....	3	1	
Sussac-Druga.....	Aug. 28-Sept. 7.....	2		
Trieste.....	June 4-Aug. 26.....	42	16	July 8, the second case from s. s. Oceania. Case July 21, from s. s. Bandiera Moro.
Ujpest.....	Aug. 24-Sept. 16.....	17	5	
Vienna.....	Aug. 14-Sept. 17.....	5	2	
Vukovar.....	Sept. 8-9.....	2	2	
Waltendorf.....	May 31.....	1		Second case. Near Gratz.
Bulgaria:				
Kalondjik.....	June 18-20.....	1	1	Vicinity of Choumen. From the ship Cyrille, bound from the coast of Asia Minor.
Varna.....	July 4-Aug. 5.....	2	2	From Asia Minor via Constantinople.
Ceylon:				
Colombo.....	May 21-July 29.....	16	11	
China:				
Amoy.....	May 28-July 1.....		4	Aug. 5, present.
Hankow.....	July 22.....			Present.
Hoihow.....	June 2.....			Do.
Manchuria—				
Dalny.....	Aug. 19-Sept. 2.....	35	19	Sept. 5, present.
Kinchow.....	Aug. 15-Sept. 2.....	10		
Nanking.....	July 22-Aug. 19.....			Present.
Swatow.....	July 22-Aug. 26.....			Do.
Dutch East Indies.....				June 10-July 9: Cases, 442; deaths, 362.
Java—				
Batavia.....	May 14-Sept. 2.....	223	203	
Beloe.....	June 15-28.....			Present.
Surabaya.....	Apr. 10-May 6.....	44	22	
France:				
Marseille.....	June 26-Aug. 31.....		76	Mainly in the asylum. To Aug. 23: Cases, 95; deaths, 35.
Greece:				
Laurium.....	July 5-8.....		1	Case July 5, from a German vessel via Naples.
Piræus, quarantine station.....	July 30-Aug. 8.....	3		Case July 30, from s. s. Margarita.
India:				
Bassein.....	May 7-July 8.....	2	2	
Bombay.....	June 25-July 1.....	3	3	
Calcutta.....	May 7-Sept. 2.....		461	
Madras.....	June 4-Sept. 16.....	18	11	May 1-July 31: Cases, 17,559; deaths, 9,514.
Moulmine.....	May 7-June 17.....	4	4	
Negapatam.....	June 11-July 15.....		35	
Rangoon.....	May 1-June 30.....	31	26	
Indo-China:				
Saigon.....	May-Aug. 27.....	73	46	And vicinity.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from July 1 to Oct. 20, 1911.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Italy.....				Total for Italy, June 8-Sept. 28: Cases, 14,031; deaths, 5,281.
Provinces—				
Alessandria.....	Aug. 1-Sept. 16....	114	33	
Aquila.....	do.....	109	49	
Avellino.....	July 12-Sept. 16....	206	74	
Bari.....	Aug. 27-Sept. 16....	271	55	
Benevento.....	July 22-Sept. 16....	96	24	
Bergamo.....	Aug. 27-Sept. 16....	43	8	
Bologna.....	Aug. 27-Sept. 16....	26	5	
Cagliari.....	Aug. 27-Sept. 2....	114	39	
Caltanissetta.....	July 17-Sept. 16....	190	37	
Campobasso.....	do.....	707	268	
Caserta.....	June 18-Sept. 16....	1,776	679	
Catania.....	July 22-Sept. 16....	697	300	
Catanzaro.....	July 20-Sept. 16....	135	62	
Chieti.....	Aug. 1-Sept. 16....	108	45	
Casoria.....	Sept. 3-9.....	125	37	
Cosenza.....	Aug. 20-Sept. 16....	103	523	
Ferrara.....	Aug. 27-Sept. 2....	26	14	
Florence.....	Sept. 3-9.....	4	1	
Foggia.....	Aug. 20-Sept. 16....	179	88	
Forlì.....	Aug. 27-Sept. 16....	36	16	
Genoa.....	July 21-Sept. 16....	379	117	
Genoa, city.....	July 13-Sept. 16....	258	130	
Girgenti.....	July 22-Sept. 16....	126	49	
Lecce.....	Aug. 27-Sept. 16....	88	28	
Leghorn.....	July 13-Sept. 16....	767	380	
Lucca.....	Aug. 1-Sept. 16....	19	3	
Massa.....	Aug. 13-Sept. 16....	66	39	
Messina.....	July 17-Sept. 16....	128	40	
Milan.....	Aug. 27-Sept. 9....	19	6	
Naples.....				The Province outside of Naples, June 10-Sept. 16: 1,324 cases; 558 deaths.
Naples, city.....	June 11-Sept. 16....	922	265	
Padua.....	Aug. 27-Sept. 16....	7	3	
Palermo.....	June 18-Sept. 16....	418	197	
Palermo, city.....	June 15-Sept. 16....	1,371	430	
Pesaro.....	Aug. 20-Sept. 16....	100	41	
Pisa.....	Aug. 20-Sept. 2....	17	8	
Potenza.....	July 31-Sept. 9....	55	13	
Reggio di Calabria.....	Aug. 6-Sept. 16....	5	2	
Reggio Emilia.....	Sept. 3-9.....	1		
Rome.....	June 27-Sept. 16....	178	96	
Rovigo.....	Aug. 27-Sept. 16....	47	10	
Salerno.....	June 17-Sept. 16....	1,339	343	
Sassari.....	Sept. 16.....	1		
Siracusa.....	Aug. 6-Sept. 16....	84	18	
Teramo.....	Sept. 3-9.....	5	5	
Trapani.....	July 17-Sept. 16....	197	106	
Venezia.....	Aug. 6-Sept. 16....	192	64	
Japan:				
Kobe.....	Aug. 30-Sept. 10....	4	1	
Nagasaki.....	Sept. 11.....	1		On s. s. Kasuga Maru.
Nishomayo.....	Aug. 28-Sept. 3....	2		
Osaka.....	Aug. 30-Sept. 16....	6		Do.
Montenegro.....	Aug. 14-17.....	4		Among troops.
Cettinje.....	July 29.....	2		
Persia:				
Adaban.....	July 29-Sept. 4....	19	8	
Ahwaz.....	Aug. 13-Sept. 2....	128	115	
Mohammerah.....	July 28-Sept. 9....	211	177	Case July 28, from the cruiser Persepolis.
Philippine Islands.....				First quarter, 1911: Manila, no cases. Provinces, 199 cases and 160 deaths. Second quarter: Manila, no cases; no deaths. Provinces, no cases; no deaths.
Manila.....	July 23-29.....	1	1	
Provinces—				
Rizal.....	do.....	1		
Union.....	July 23-Aug. 5....	4	3	
Roumania.....				Total to Sept. 21: Cases, 18; deaths, 13.
Braila.....	Sept. 11.....	6	4	Sept. 13: 3 cases and 2 deaths in a village in vicinity.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from July 1 to Oct. 20, 1911.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Russia.....				New outbreak Apr. 21-Oct. 7: Cases, 2,003; deaths, 1,018, including 7 cases and 2 deaths, p. 1044, vol. 1.
Astrakhan.....	July 12-Sept. 2....	316	138	
Baku—				
Baku, city.....	July 8-26.....	5	1	
Dagestan.....	Aug. 13-19.....	27		
Jaroslav.....	Aug. 20-26.....	8	3	
Khasan—				
Kosmodemiansk.....	July 2.....	1		
Kherson.....	May 3-July 22.....	2		
Khuban.....	Aug. 13-26.....	1	2	
Moscow.....	Aug. 13-19.....	1		
Moscow.....	Aug. 20-26.....	1	1	
Nijni Novgorod.....	Aug. 27-Sept. 2.....	1		
Novoryssk.....	July 28-Sept. 2.....	9	3	6 cases, July 28-Aug. 6, on British steamer Wakefield in Black Sea.
Odessa.....	Aug. 6-12.....	2	1	
Poltava.....	June 24.....	1		
Rostov on Don.....	Aug. 6-Sept. 2.....	26	10	Aug. 6-12, 1 case from a Turkish ship from Trebizond.
Samara.....	June 29-Sept. 2.....	682	390	Including Nikolayevsk.
Saratov.....	July 18-Sept. 2.....	102	49	
Nikolayevsk.....	June 29-July 3.....	15	1	
Siberia—				
Omsk.....	June 20-26.....	2		
Simbirsk.....	Aug. 6-Sept. 2.....	60	41	
Stavropol.....	July 23-Aug. 19.....	7	1	
Tambov.....	June 26-Sept. 2.....	17	8	
Vilna—				
Disna.....	June 13.....	1		On the Duna.
Vitebsk—				
Lepel district.....	June 19.....	1	1	
Tver and Kursk.....	Aug. 6-12.....	1		
Voronesh.....	Apr. 28-Aug. 12.....	5	4	
Yekaterinislav.....	July 8-19.....	2	1	
Zarizyn.....	July 12-15.....	1	1	
Servia:				
Belgrade.....	Sept. 9.....			Present.
Rachka.....	Aug. 23-Sept. 8.....	8	2	Case Aug. 23 from Beoca, Studenitz district.
Ravta.....	Aug. 30-Sept. 2.....			Present.
Siam:				
Bangkok.....	Apr. 16-Aug. 5.....	939	939	
Spain:				
Tarragona.....	Aug. 30.....			In vicinity.
Straits Settlements:				
Began Dotah.....	June 16-20.....	11		
Jenderata.....	July 1-8.....	20	13	
Penang.....	May 7-Aug. 12.....	8	11	
Perak.....	May 16-June 21.....			Present among Malays and Chinese.
Singapore.....	May 7-Sept. 2.....	86	98	
Tripoli:				
Tripoli.....	Oct. 13.....	4		
Tunis Regency.....				Total Sept. 17-20: Cases, 217; deaths, 123.
Bizerta.....	Sept. 17-20.....	25	9	
Tunis.....	Aug. 1-7.....		6	Sept. 26, present.
Turkey:				
Constantinople.....	May 21-Sept. 25.....	2,187	1,213	And vicinity.
Medua.....	Aug. 24-Sept. 1.....	5	1	
Soloniki.....	Aug. 11-Sept. 24.....	164	89	Among troops.
Valona.....	Aug. 27-Sept. 7.....	28	8	
Turkey in Asia:				
Alatsham.....	June 19.....	2		
Amara.....	June 21.....			Present.
Bagdad Vilayet.....	May 29-Sept. 9.....	296	212	New outbreak.
Basra.....	July 17-Sept. 23.....	291	204	Aug. 9, 1 case, s. s. Budrie.
Beirut.....	Aug. 21.....			Present among pilgrims.
Damascus.....	Aug. 14-Sept. 15.....	22	17	
Erzeroum, vilayet.....	Sept. 13-30.....			Present in Erzizinghan, Unieh, and at Kerassunde, 5 cases and 7 deaths.
Etra's Tomb.....	June 17.....	6		70 miles from Basra.
Foglieri.....	July 26.....	2	1	In the Gulf of Smyrna.
Kanara.....	May 28-July 11.....	8	5	Among troops.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from July 1 to Oct. 20, 1911.****CHOLERA—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Asia—Continued.				
Kavak.....	June 5-11.....	1	.....	Aug. 8, present.
Kharput.....	Aug. 20-Sept. 9.....	27	22	And vicinity.
Medina.....	Sept. 15-22.....	53	39	
Mekka.....	Sept. 1-24.....	352	314	
Samsun.....	May 29-July 30.....	225	204	And district.
Smyrna.....	Apr. 26-Sept. 24.....	974	497	Including 24 cases and 14 deaths, p. 1911, vol. 2.
Zongouldak.....	July 1-Sept. 24.....	82	57	And vicinity.
At sea.....	June 23.....	1	1	On s. s. Goeben, bound from Southampton for Suez. Case developed 1 day after leaving Naples.
Do.....	July 25.....	.....	.....	2 cases from s. s. Zar Nicolaus from Algiers.

YELLOW FEVER.

Brazil:				
Ceara.....	July 1-31.....	.....	1	
Mannoe.....	June 4-Sept. 23.....	.....	19	
Para.....	June 21-Sept. 9.....	5	1	
Pernambuco.....	June 15-Aug. 15.....	.....	8	Sept. 4, present.
Dissagos Islands:				
Bulama.....	May 27.....	.....	.....	Present.
British Gold Coast:				
Accra.....	May 23-27.....	3	.....	Among natives.
Ecuador:				
Babahoyo.....	July 16-Aug. 15.....	2	2	
Calaroma.....	July 16-31.....	1	1	
Guayaquil.....	June 1-Aug. 31.....	30	10	
Milagro.....	June 1-Aug. 15.....	17	13	
Naranjito.....	July 1-15.....	2	.....
Yaguachi.....	June 16-July 15.....	1	1	
Gambia:				
Bathurst.....	May 23-27.....	5	2	Among Europeans.
Mexico:				
Merida.....	.....	.....	.....	Total Aug. 1-Oct. 14: Cases, 35; deaths, 13.
Venezuela:				
Caracas.....	July 1-Sept. 9.....	22	1	
La Pastora.....	Aug. 5.....	.....	.....	Present.
Maiquetia.....	July 22.....	2	.....
San Juan.....	Aug. 5.....	1	.....

PLAGUE.

Arabia:				
Maskat.....	May 21-June 15.....	4	2	
Brazil:				
Para.....	July 2-Sept. 9.....	5	4	Sept. 16, 2 cases.
Pernambuco.....	June 15-Aug. 31.....	.....	7	Sept. 4, present.
Rio de Janeiro.....	July 16-Sept. 9.....	13	3	Oct. 9, 1 case.
British East Africa:				
Kismayu.....	Apr. 24-Aug. 16.....	55	42	
Nairobi.....	May 27-Aug. 5.....	34	19	
Port Florence.....	Apr. 26.....	1	1	
Chile:				
Arica.....	June 12-July 28.....	4	3	
Iquique.....	May 14-Sept. 9.....	39	23	
China:				
Amoy.....	May 21-July 17.....	.....	20	To May 28: Cases, 61; July 8, present in the district.
Kulangsu.....	June 17-July 22.....	.....	5	
Canton.....	May 18-Aug. 12.....	.....	.....	Present, and in neighboring can- tons.
Hongkong.....	May 14-Sept. 2.....	200	156	Jan. 1-Aug. 15: Cases, 250; deaths, 240.
Shanghai.....	Aug. 10-26.....	31	19	May 14-27, 3 cases.
Swatow.....	May 21-July 22.....	.....	.....	May 21-June 2, epidemic in Chao- chow-fu. Hweilal, Kit-yang, and in Chao-Yang, Jan. 1-June 30, 6,000 deaths.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from July 1 to Oct. 20, 1911.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Ecuador:				
Guayaquil.....	June 1-Aug. 31....	28	11	
Egypt:				
Alexandria.....	May 31-Sept. 12....	42	18	
Cairo.....	Feb. 12-May 31....	1	1	
Port Said.....	May 27-Sept. 3....	35	15	On s. s. Yeddo, bound for Calcutta from New York, via Naples and Torre Vieja, Spain.
Provinces—				
Assiout.....	May 31-July 9....	7	5	
Behera.....	May 23-Sept. 4....	3	—	
Beni Souef.....	May 23-Aug. 10....	4	1	
Dakahlieh.....	May 29-June 11....	2	1	
Fayoum.....	May 28-June 17....	8	5	
Galloubeh.....	June 1-Aug. 22....	2	2	
Girgeh.....	Apr. 19-July 7....	5	4	
Kena.....	May 30-June 12....	5	5	
Minieh.....	June 1-July 27....	29	11	
India:				
Bahrein Island.....	May 15-July 16....	—	1,925	In Persian Gulf.
Bombay.....	May 21-Sept. 16....	624	545	
Calcutta.....	May 7-Sept. 2....	—	611	
Karachi.....	May 28-Sept. 9....	215	212	
Rangoon.....	May 1-July 31....	9,843	7,108	
Bombay Presidency and Sind.....	May 7-Aug. 26....	20,507	14,170	
Madras Presidency.....	do.....	2,467	1,777	
Bengal.....	do.....	2,622	2,360	
United Provinces.....	do.....	18,084	17,521	
Punjab.....	do.....	60,877	53,359	
Burma.....	do.....	1,731	1,007	
Eastern Bengal and Assam.....	Aug. 6-26....	2	12	
Central Provinces.....	May 7-Aug. 26....	603	351	
Mysore State.....	do.....	5,197	3,639	
Hyderabad State.....	do.....	431	347	
Central India.....	do.....	223	149	
Rajputana and Ajmere.....	May 20-Aug. 26....	1,690	1,452	
Merwara.....	do.....	—	—	
Kashmir.....	May 7-July 1....	624	425	
North West Province.....	do.....	110	79	
Grand total.....		115,168	97,248	
Indo-China:				
Saigon.....	May 15-Aug. 27....	326	100	And vicinity.
Japan:				
Formosa.....	May 21-July 1....	115	106	In Kagi Province from Jan. 1-June 15: Cases, 355, including report, p. 1047, vol. 1.
Java:				
Kediri.....	Mar. 31-July 22....	60	21	
Madison.....	June 1-Aug. 26....	2	—	
Paseroean Residency.....	May 14-Sept. 2....	615	239	
Surabaya.....	Apr. 30-May 18....	21	4	
Mauritius.....	Mar. 1-July 10....	10	6	
Morocco:				
Mazagan.....	July 13.....	—	—	Present among the Doukala, 5 hours distant.
New Zealand:				
Auckland.....	May 1-8.....	5	—	Total since Mar. 21: Cases, 8; deaths, 1.
Paraguay:				
Asuncion.....	Aug. 1-9.....	—	8	Present.
Persia:				
Buchir.....	May 14-June 25....	94	80	
Lingah.....	May 18-28.....	7	—	From Debal, on opposite Arabian coast.
Peru:				
Departments—				
Ancachs.....	Apr. 30-June 17....	9	2	
Arequipa.....	Apr. 23-June 17....	20	4	
Caiaamarca.....	do.....	—	—	Aug. 10, present.
Callao.....	do.....	5	2	Sept. 24, 1 case.
Chiclayo.....	Apr. 30-July 22....	14	5	
Lambayeque.....	Apr. 23-June 3....	24	12	
Libertad.....	Apr. 23-July 22....	17	7	Aug. 21, present in Moche.
Lima.....	do.....	47	17	
Pacasmayo.....	Apr. 30-June 3....	3	2	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from July 1 to Oct. 20, 1911.

PLAGUE—Continued

Places.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands.....				First quarter, 1911: Manila, no cases; Provinces, no cases.
Mariveles quarantine station.	May 25-26.....	1	1	From s. s. Taisang from Amoy.
Russia:				
Odessa.....	June 18-Aug. 8....	8	2	
Astrakhan Government—				
Ujaly.....	July 3.....			Present.
Saral'schln.....	June 18-24.....	3	3	
Kirghis Steppe—				
Akbulak.....	July 13-Aug. 2....	5	2	Pneumonic.
Kjubekudik.....	July 15.....	5	4	Do.
Narvma.....	June 24.....	4	4	
Siam:				
Bangkok.....	Apr. 16-Aug. 5....	72	72	
Straits Settlements:				
Singapore.....	May 21-Sept. 2....	6	6	
Turkey in Asia:				
Adalia.....	July 7-Aug. 30....	4		
Basra.....	May 21-31.....	4	2	
Beirut.....	Aug. 21.....			Present among pilgrims, and present in the Lebanon district.
Brusa.....	Aug. 2-15.....	2		
Venezuela:				
Baruta.....	Sept. 3-9.....			
Caracas.....	May 29-Sept. 9....	10		
Santa Rosalia.....	Aug. 5.....	1		

SMALLPOX.

Algeria:				
Departments—				
Aigiers.....	Mar. 1-Aug. 31....	5	2	July 1-31, 5 deaths.
Constantine.....	Mar. 1-May 31....	74		
Arabia:				
Aden.....	Apr. 11- Aug. 22...	206	7	And vicinity.
Argentina:				
Buenos Aires.....	Apr. 1-June 30....		89	
Rosario.....	do.....		125	
Austria-Hungary:				
Bohemia.....	May 28-June 17....	5		
Galicia.....	May 28-July 15....	3		
Brazil:				
Bahia.....	Apr. 1-30.....		1	
Ceara.....	June 1-30.....		1	
Para.....	June 25-Sept. 16....	9	2	
Pernambuco.....	June 1-Aug. 31....		628	
Rio de Janeiro.....	May 28-Sept. 9....	24	1	
Sao Paulo.....	May 15-21.....		1	
Canada:				
British Columbia—				
Vancouver.....	July 9-Sept. 23....	8		
Victoria.....	May 1-31.....	10		
Manitoba—				
Fort Alexander.....	July 8.....	19		Among Indians
Lac de Bonnet.....	do.....	1		
Point du Bois.....	do.....			Epidemic.
Selkirk.....	do.....	1		From Mapleton.
Winnipeg.....	July 23-29.....	1		
New Brunswick—				
Newcastle.....	July 15-Aug. 5....			Present in vicinity.
Ontario—				
Ottawa.....	June 11-Oct. 7....	25		
Nova Scotia—				
Halifax.....	May 23-Sept. 30....	6		
Prince Edward Island—				
Charlottetown.....	June 14-20.....	1		
Quebec—				
Montreal.....	July 9-Sept. 30....	7		
Quebec.....	June 18-Sept. 30....	14		
Yukon.....	Sept. 17.....	66	1	On the Porcupine
Dawson.....	June 4-July 1....	15		
Ceylon:				
Colombo.....	May 21-Sept. 2....	37	3	
Chile:				
Calders.....	June 24.....	2	1	
Punta Arenas.....	June 1-July 31....	3	1	
Talcahuano.....	June 27-Sept. 9....	104	25	
Valparaiso.....	June 24-Sept. 2....	268		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from July 1 to Oct. 20, 1911.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Chungking.....	May 28-Aug. 19.....			Present.
Hongkong.....	May 21-Sept. 2....	30	23	
Nanking.....	May 28-Sept. 23....			Do.
Shanghai.....	May 24-July 16....	2	8	Deaths among natives.
Swatow.....	May 28-July 22....			Present in the district.
Colombia:				
Cartagena.....	May 22-July 9.....			Present.
Egypt:				
Alexandria.....	Apr. 1-July 31....	64	32	
Cairo.....	May 22-Aug. 19....	11	4	
Port Said.....	May 29-Aug. 19....	14	13	
France:				
Havre.....	July 16-22.....	1	1	
Marseille.....	Aug. 1-31.....		1	
Paris.....	June 18-Aug. 26....	9		
Germany.....				Total for Germany, June 4-Sept. 9: Cases, 24.
Bremen.....	July 9-15.....	1		
Hamburg.....	Aug. 6-19.....			3 cases on s. s. Prinz Regent.
Gibraltar.....	June 4-Sept. 10....	2		
Great Britain:				
Birmingham.....	July 2-15.....	1	1	
Dundee.....	June 11-Aug. 12....	10	3	
Liverpool.....	June 19-July 8....	2		
London.....	June 4-24.....	13		
Plymouth.....	July 2-8.....		1	
Sheffield.....	June 18-24.....		1	
India:				
Bombay.....	May 21-Sept. 16....	115	94	
Calcutta.....	May 7-June 24.....		6	
Madras.....	May 21-Sept. 16....	138	59	
Rangoon.....	May 1-July 31.....	333	161	
Indo-China:				
Saigon.....	May 15-Aug. 27....	121	48	And vicinity.
Italy:				
Catania.....	July 19-Aug. 12....		4	
Genoa.....	Aug. 1-15.....	2		
Naples.....	June 11-Sept. 23....	79	10	
Palermo.....	June 4-Sept. 23....	466	280	
Rome.....	Mar. 1-31.....	1	1	
Japan:				
Yokohama.....	June 13-19.....	1		
Java:				
Batavia.....	July 2-Sept. 2.....	24	8	
Malta:				
Valetta.....	June 6-12.....	1		
Mexico:				
Aguascalientes.....	Aug. 28-Sept. 24....		3	
Cananea, mines.....	Sept. 12-22.....	30		
Chihuahua.....	June 28-Sept. 10....	22	10	
Frontera.....	June 19-24.....	1		
Guadalajara.....	June 18-Aug. 19....		3	
Inurris.....	Sept. 22.....	10		
Juarez.....	July 9-Sept. 30....	23	6	
Mazatlan.....	Aug. 6-Sept. 9.....	13	4	
Mexico.....	May 21-Sept. 2.....		155	July 23-Sept. 30, 65 cases.
Porfirio Diaz.....	July 23-Sept. 30....	9	7	
San Juan Bautista.....	June 17-July 15....			Present and in vicinity. Aug. 26 increasing.
San Luis Potosi.....	June 4-Sept. 2.....	15	15	
Tampico.....	June 11-Sept. 30....		8	
Peru:				
Salaverry.....	Aug. 1-7.....			Present.
Philippine Islands.....				First quarter, 1911, Manila: Cases, 93; deaths, 0. Second quarter: Cases, 142; deaths, 0.
Portugal:				
Lisbon.....	June 4-Sept. 16....	88		May 7-20, deaths 3.
Porto Rico:				
Ponce.....	Apr. 1-30.....		1	
Portuguese East Africa:				
Lourenco Marquez.....	do.....		1	
Russia:				
Batoum.....	May 1-June 30....	3		
Libau.....	June 5-Sept. 10....	13	1	July 16, 1 death.
Moscow.....	May 28-Sept. 9.....	158	83	
Odessa.....	May 27-Sept. 16....	8		
Reval.....	May 1-31.....	5		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from July 1 to Oct. 20, 1911.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Russia—Continued.				
Riga.....	May 27-Sept. 23....	18	.....	Apr. 1-May 31, deaths 14.
St. Petersburg.....	May 21-Sept. 2....	151	29	
Warsaw.....	Apr. 2-July 13....	64	35	
Windau.....	June 25-July 1....	.....	.....	Present.
Siam:				
Bangkok.....	Apr. 16-Aug. 5....	100	94	
Siberia:				
Omsk.....	May 29-July 14....	3	.....
Vladivostok.....	May 14-June 30....	12	5	
South Africa:				
Port Elizabeth.....	May 21-27.....	1	.....
South Australia:				
Adelaide.....	Apr. 15.....	.....	.....	1 case from Colombo on s. s. Mooltan.
Spain:				
Barcelona.....	May 6-17.....	.....	4	
Madrid.....	June 1-July 31....	.....	2	
Malaga.....	do.....	.....	35	
Seville.....	June 1-Aug. 31....	.....	5	
Valencia.....	June 4-Sept. 16....	55	10	
Straits Settlements:				
Penang.....	Apr. 30-Aug. 12....	4	2	
Singapore.....	May 7-Sept. 2....	151	43	
Switzerland:				
Ticino, canton.....	May 28-June 3....	1	.....
Turkey:				
Constantinople.....	June 4-Sept. 10....	.....	10	
Turkey in Asia:				
Beirut.....	May 27-Sept. 23....	92	24	
Kharput.....	May 21-June 10....	34	3	
Uruguay:				
Montevideo.....	Apr. 1-July 31....	41	12	
Zanzibar:				
Zanzibar.....	May 15-Sept. 1....	24	14	
At sea.....	May 15.....	1	.....	On s. s. Narrung; vessel quarantined at Adelaide, Melbourne, and Sydney.

MORTALITY.

Weekly Mortality Table, Foreign and Insular Cities.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—								
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.
Aguascalientes.....	Oct. 1	40,000	48	3	.....	.....	.....	1	2	.....	.....	.....
Do.....	Oct. 8	.....	46	.....	.....	.....	.....	.....	.....	.....	.....	1
Antwerp.....	Sept. 23	327,668	74	3	.....	.....	.....	.....	.....	.....	.....	1
Barcelona.....	Oct. 4	591,272	29	.....	.....	.....	.....	.....	4	.....	2	.....
Berlin.....	Sept. 16	2,067,914	600	71	.....	.....	.....	.....	6	6	14	11
Do.....	Sept. 23	.....	598	60	.....	.....	.....	.....	3	11	23	12
Birmingham.....	do.....	526,030	154	.....	.....	.....	.....	.....	.....	1	1	3
Do.....	Sept. 30	.....	157	.....	.....	.....	.....	.....	.....	.....	.....	2
Bombay.....	Sept. 9	977,822	539	46	12	.....	.....	3	.....	.....	.....	.....
Do.....	Sept. 16	.....	561	47	16	.....	.....	4	.....	.....	.....	.....
Bordeaux.....	Sept. 30	253,000	102	13	.....	.....	.....	.....	1	.....	.....	.....
Do.....	Oct. 7	.....	89	22	.....	.....	.....	.....	1	.....	.....	.....
Bradford.....	Sept. 23	288,723	78	4	.....	.....	.....	.....	2	.....	1	1
Do.....	Sept. 30	.....	70	8	.....	.....	.....	.....	1	.....	.....	1
Bremen.....	Sept. 23	246,850	78	13	.....	.....	.....	.....	.....	.....	1	1
Bristol.....	Sept. 30	357,509	88	8	.....	.....	.....	.....	3	.....	1	.....
Brussels.....	do.....	739,684	176	25	.....	.....	.....	.....	2	1	2	.....
Budapest.....	Sept. 16	950,610	.....	.....	.....	3	.....	.....	2	7	1	1

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—									
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.
Cairo.....	Sept. 9	689,439	613						15	6	1	17	3
Campbelltown.....	Oct. 9	3,800								1			
Charlottetown.....	Oct. 10	110,000										2	
Chihuahua.....	Sept. 17	39,000	26	1						2		1	
Christiana.....	Sept. 23	245,000	65	8									1
Do.....	Sept. 30		48	7						1			1
Coburg.....	Sept. 23	23,798	8						1				1
Cologne.....	do.....	520,012	210	20						1		2	5
Colombo.....	Aug. 26	213,794	160	15				1		17			
Do.....	Sept. 2		157	20						13			
Colon.....	Oct. 7	17,369	6							1			
Constantinople.....	Sept. 24	1,000,000	299	27		94				13	2	1	
Copenhagen.....	Sept. 16	462,000	137	10									3
Dublin.....	Sept. 23	403,732	183	14						3	3		
Do.....	Sept. 30		161	19						6	1		1
Dundee.....	Sept. 23	171,006	60	5								1	3
Do.....	Sept. 30		60	2									
Durban.....	Aug. 26	69,165	18	4								1	
Do.....	Sept. 2		20									1	
Do.....	Sept. 9		5	1									
Fiume.....	Sept. 30	50,811	23	6									
Georgetown.....	Sept. 23	56,000	44	7									
Glasgow.....	Sept. 29	784,655	266							3	3		5
Do.....	Oct. 6		215							1		14	1
Hamburg.....	Sept. 23	931,035	299	18						2	2	21	1
Do.....	Sept. 30		281	28									5
Hongkong.....	Sept. 2	336,488			1			4					
Hull.....	Sept. 23	278,968	120							2			3
Do.....	Sept. 30		117							4			1
Iquique.....	Aug. 12	40,000		5						1			
Do.....	Aug. 19			7	4								
Do.....	Aug. 26			7	3					1			
Do.....	Sept. 2			8	2								
Do.....	Sept. 9			6	1					1			
Do.....	Sept. 16			5	1								
Do.....	Sept. 23			7	2					1			
Karachi.....	Sept. 9	148,000	46		4								
Kingston, Jamaica.....	do.....	59,584								2			
Kobe.....	Sept. 10	404,851	182							1		1	
Do.....	Sept. 17		210							1		1	
Konigsberg.....	Sept. 23	247,300	67	8						1	1		
Leeds.....	Sept. 30	445,568	143	9							1	1	
Leipzig.....	Sept. 23	595,703	175	21						2		2	1
Libau.....	Oct. 1	90,000								1			
Liege.....	Sept. 16	174,768	51	2						1			
Do.....	Sept. 23		40								2		1
Liverpool.....	do.....	747,627	365	20						3	1	5	3
Do.....	Sept. 30		280	25						4	3	2	1
London.....	do.....	7,260,752	1,992							10	5	27	4
Lubeck.....	do.....	99,000	29	3								2	1
Lyon.....	Sept. 16	523,796	167	22						1		1	1
Do.....	Sept. 23		138	21						2			
Magdeburg.....	Sept. 16	280,089	116	3							2	5	1
Manchester.....	Sept. 23	631,533	255	19						2		2	3
Do.....	Sept. 30		220	26								3	
Mexico.....	Sept. 9	719,052	334	30				2	10		1		1
Do.....	Sept. 16		294	12				2	7				2
Moncton.....	Oct. 14	13,500	7									1	
Monterey.....	Oct. 8	100,000	60	9						1			
Montreal.....	Oct. 7	450,000	124	11						1			2
Do.....	Oct. 14		151	10						5	2	4	
Munich.....	Sept. 16	597,000	178	17							1		3
Do.....	Sept. 23		199	14						4			
Nagoya.....	Sept. 2	414,998	147							4			
Nantes.....	Sept. 10	161,908	118	13						3			
Newcastle-on-Tyne.....	Sept. 23	267,261	88	9							1		2
Do.....	Sept. 30		80	3							3		
Nottingham.....	Sept. 16	259,942	92							2	1		3
Do.....	Sept. 23		94							1		2	1

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—								
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.
Nuevo Laredo.....	Oct. 7	9,000	7	1					1			
Odessa.....	Sept. 23	546,000	182	22					4	8	1	1
Ottawa.....	Sept. 30	90,000	25	1					1			
Do.....	Oct. 7		33	2						2		
Paris.....	Sept. 30	2,846,986	854	165					8	2	2	5
Patras.....	Oct. 1	40,000	14	2					2			
Porfirio Diaz.....	Sept. 30	16,000	4					1				
Port Said.....	Sept. 9	52,811	29		1				1			
Quebec.....	Oct. 7	85,000		2					1		2	
Do.....	Oct. 14										1	
Rotterdam.....	Sept. 23	432,573	108						2			
Do.....	Sept. 30		106						1	1	1	
Saigon.....	Sept. 3	206,000				1		1				
St. John, N. B.....	Oct. 7	40,711	15	1					1		1	
St. Petersburg.....	Sept. 9	1,907,708	750	100				2	13	8	3	20
Saloniki.....	Sept. 23	200,000				18						
San Luis Potosi.....	do.....	82,946	57	5				3	2			1
Santiago de Cuba.....	Sept. 24	53,614	10						1			
Do.....	Sept. 30		17	3							1	
Sarnia.....	Oct. 7	9,810	6	1					1			
Seoul.....	Aug. 31	69,469		1					1			
Swansea.....	July 29											
Tapachula.....	Sept. 30	115,100	398	26							7	4
Do.....	July 8	25,000	56	4				7				
Do.....	Aug. 5		33	1				1				1
Do.....	Aug. 12		27					3				
Do.....	Aug. 26		43	1				2				
Vancouver.....	Oct. 7	100,000	22						3		1	
Vigo.....	Sept. 23	41,500	26	5								1
Do.....	Sept. 30		11	1								
Warsaw.....	July 22	797,093	288	38				5	2	8		1
Do.....	July 29		285	41				2	3	5		8
Do.....	Aug. 5		349	34				7	3	12	3	12
Do.....	Aug. 12		301	23				4	5	12	5	6
Winnipeg.....	Oct. 9	151,958	22							2		
Yokohama.....	Sept. 25	419,630							2			

By authority of the Secretary of the Treasury:

WALTER WYMAN,

Surgeon General,

United States Public Health and Marine-Hospital Service.